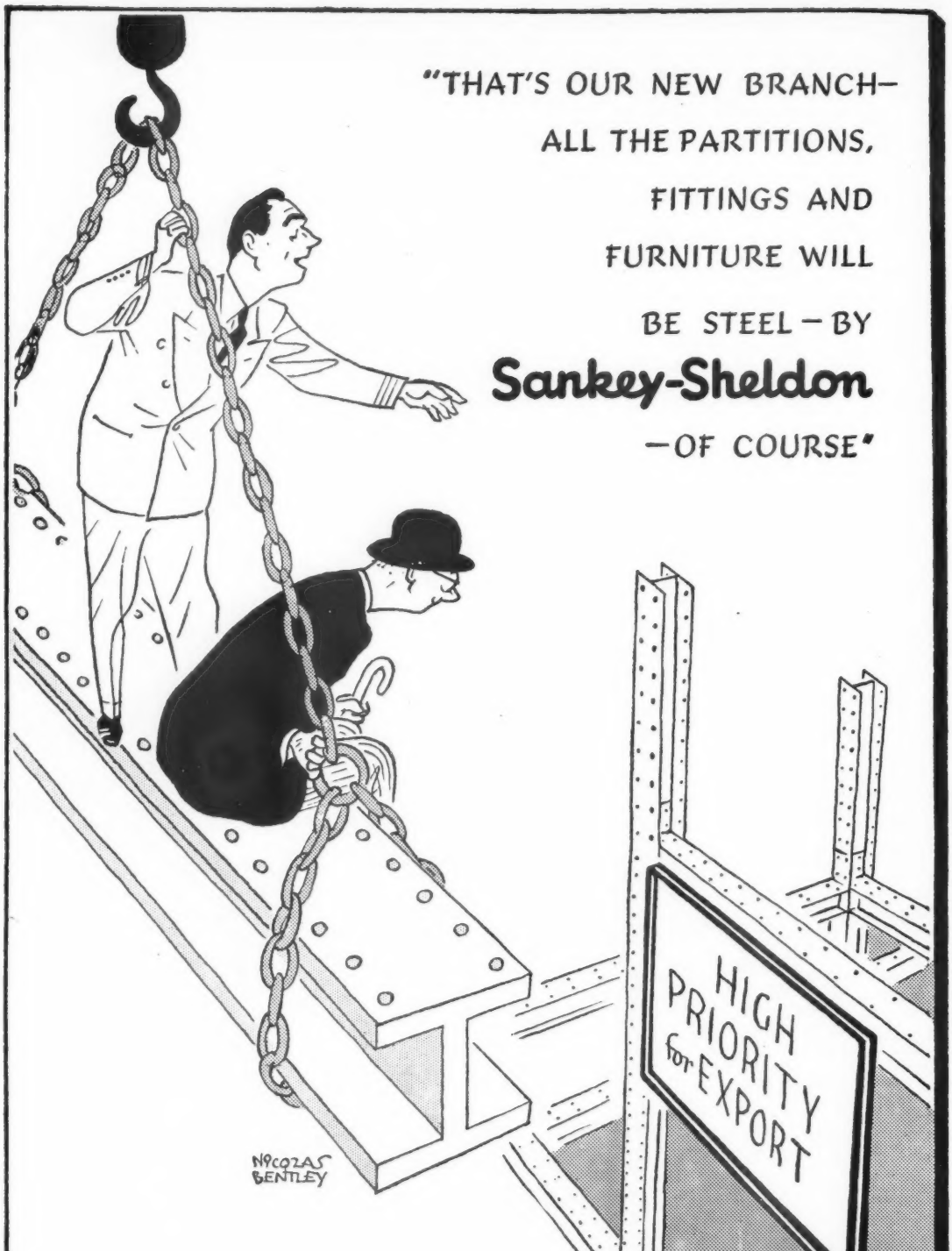
THIRD SERIES · VOL. 56 NUMBER 12 · OCTOBER 1949

THE JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

66 PORTLAND PLACE LONDON W1 · TWO SHILLINGS AND SIXPENCE

The Lion of the Royal Arms (Photograph by Derek Pratt) from the Exhibition of British Architecture 1849 at the R.I.B.A.


"THAT'S OUR NEW BRANCH—
ALL THE PARTITIONS,
FITTINGS AND
FURNITURE WILL
BE STEEL — BY
Sankey-Sheldon
—OF COURSE"
HIGH
PRIORITY
for EXPORT
NICOLAS
BENTLEY
Sankey-Sheldon Limited, 46 Cannon St., London, E.C.4

THE JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

THIRD SERIES VOL 56 NUMBER 12 : OCTOBER 1949 : 66 PORTLAND PLACE LONDON W1 : TWO SHILLINGS & SIXPENCE

509 EDITORIAL

511 EXHIBITION OF ITALIAN ARCHITECTURE

517 BOURNVILLE VILLAGE TRUST

522 NATURAL LIGHTING IN FACTORIES—WILLIAM ALLEN

525 THE NORTH-EAST POLDER HOLLAND

530 THE PALACE OF THE 'ABBASID CALIPHS AT SÂMARRA

534 REVIEW OF CONSTRUCTION AND MATERIALS

536 VILLAGE HALL FOR ST. OLAVE'S, SUFFOLK

537 THE ARCHITECT AND THE BUILDING INDUSTRY—SIR LANCELOT KEAY

539 SALARY SCALES FOR ARCHITECTS IN LOCAL GOVERNMENT

539 PRACTICE NOTES

542 BOOK REVIEWS

545 NOTES AND NOTICES

546 REVIEW OF FILMS—12

547 OBITUARIES

548 MEMBERS' COLUMN

The Inaugural Meeting

The President, Mr. Michael Waterhouse, M.C., will deliver his Inaugural Address at the first meeting of the 1949-50 Session on Tuesday 1 November. The President will speak on his experiences with the Building Productivity Team which recently visited the United States to study building methods. Several members of the Team will be present as guests at the meeting.

The Building Exhibition

The Building Exhibition fills an important place in the national building economy. It is visited, almost as a matter of course, by everyone who seeks to expand his knowledge of the resources of the industry, whether he be practising architect, assistant, contractor, manufacturer, operative or student. It represents virtually every branch of the materials and equipment supply side of the industry, and government and official bodies such as the Department of Scientific and Industrial Research and the Ministry of Works and Ministry of Town and Country Planning take space in which to show the latest technical developments.

This year there will be 20 per cent more floor area used than in 1947, and all stand space has been let. The exhibition therefore looks like being an outstanding success. It will be opened by the Rt. Hon. Aneurin Bevan, M.P., Minister of Health.

An admission card to the exhibition will be found enclosed with this JOURNAL. Members who visit the exhibition are asked to make a special point of using this card because its presentation ensures a donation of 3*s.* 6*d.* to the Architects' Benevolent Society. The ticket has a counterfoil, which should be torn off when the ticket is presented, as this entitles the holder to tea in the R.I.B.A. Club on the first floor over the Addison Rd. entrance. Both the tickets and club room have been generously provided by Mr. H. Greville Montgomery [*Hon. A*] and Mr. Hugh R. G. Montgomery, M.C.

The Montgomery family have long been benefactors of the Architects' Benevolent Society. It is through their generosity that the Tombola is being held on behalf of the funds of the Society. Particulars of this have already been announced, and it remains for us to report that numerous valuable gifts have been received, but that still more are wanted if the Society's aim of 'A thousand gifts—a thousand guineas' is to be achieved. The gifts received include many fine pieces of china, pottery and glass; one member has sent a book token, a simple, easily portable form of gift which others might feel inclined to repeat. The Society would like more objects of general interest and use—a piece of ovenware is one such gift—and more pictures. Time is short; members are therefore asked not to delay sending their gifts which ought to be received before 17 November.

Ministry of Works' Lectures at the R.I.B.A.

A series of lectures is to be given by the Ministry of Works on various aspects of the building and civil engineering industries, and the difficulties that arise. The series will be similar to that given last winter in the provinces, but this time they will be held in the London region, and the first is to be delivered in this Institute on Monday 14 November 1949 at 6.30 p.m. The speaker will be Mr. R. Fitzmaurice [*Hon. A*], and he will deal with the importance of new techniques in building and their effect on the work of the architect.

It was originally arranged that Mr. Fitzmaurice should give a lecture under the auspices of the Architectural Science Board, on 22 November 1949, but as the subject would have been much the same it has been decided to combine the two meetings, and the A.S.B. lecture will not now be given as a separate event.

The title of Mr. Fitzmaurice's lecture on 14 November will be: *Changes in Building Technique*.

Prestressed Concrete Exhibition

The Ministry of Works' travelling Exhibition of Prestressed Concrete is to be shown at Bristol from 21 October to 1 November. It will be on view at Electricity House, Colston Avenue, City Centre, from 10 a.m. to 5 p.m., Saturdays included. It will then be included in the Building Exhibition at Olympia after which the Ministry intends it to travel to other parts of the country. The exhibition, which was first shown at Tunbridge Wells' Building Week and subsequently at Reading, gives a far better idea of this important new technique than any amount of 'reading matter' can achieve. Members would be well advised to take a favourable opportunity to see it.

Building in Britain Today

This is the title of a booklet produced by the Stationery Office, price 6d., intended as general propaganda for building among the general public. Among its sections is one on 'The Professions', which begins with a succinct account of the architectural profession, the R.I.B.A. and the function of the architect. It tells the layman by means of excellent illustrations and short, simply worded text, what are the component sections of the building industry and the parts they play in the whole. It is good that the layman is told by the government that 'The main function of the architect is to design and supervise the erection of buildings, and he is thus the co-ordinator of all the related services. He is both an artist and a technician, since both the attractiveness and the efficiency of our buildings are largely in his hands'. The unnamed designer and author are to be congratulated, as is the Ministry of Works, on a skilful piece of propaganda.

Sir Malcolm Trustram Eve Resigns

On 20 September it was announced that Sir Malcolm Trustram Eve, K.C., had tendered his resignation as chairman of the Central Land Board and of the War Damage Commission. The Chancellor of the Exchequer for the War Damage Commission and the Minister of Town and Country Planning and the Secretary of State for Scotland for the Central Land Board propose to continue the arrangement under which the Commission and Board have the same personnel. They have appointed as chairman of the Commission and Board to succeed Sir Malcolm Eve Sir Thomas Phillips, until recently Secretary to the Ministry of National Insurance and formerly Secretary to the Ministry of Labour: he is also Chairman of the Working Party on the Building Industry. This appointment will be on a part-time basis.

The President, R.I.B.A., received the following letter from Sir Malcolm Trustram Eve :—

My dear President,

It will be announced tomorrow that I am resigning my Chairmanship of the Central Land Board and War Damage Commission. My work has kept me in such close touch with your Institute for so long that I feel I owe you and your members an early personal explanation of my reasons for giving up these appointments.

The War Damage Commission was formed under my Chairmanship in March 1941, eight-and-a-half years ago. Since then we have accepted three-and-a-half million notifications of damage, and paid out £820 million in compensation. Those are bare facts which do not reflect the many anxious decisions which the administration of the War Damage Acts has involved, nor the moral and actual support those decisions have received from your Institute and from its members who have advised both the public and the Commission. I wish I could tell you that the end of this work is in sight, but reconstruction is of necessity slow and we have been able to do no more than keep in step.

In November 1947 I was invited by the Government to undertake in addition, as Chairman of the Central Land Board, the administration of the financial provisions of the Town and Country Planning Act. It was, as you know, convenient for the Board and Commission to work as one, using the organization which the War Damage Commission had built up. This was a new field and I knew I could rely on the continued co-operation so vital to success, of the professional bodies. But I also knew that the administration of 'compensation' legislation is a burden which no one can carry indefinitely. I therefore accepted the invitation on the understanding that I would be free to tender my resignation after two years if I wished to do so.

I have thus been faced with the alternatives of continuing in public service until I am too old for anything else, or cutting adrift now into another sphere. I have chosen the latter, although I do not as yet know what that other sphere will be.

I have said publicly more than once in the past that the Town and Country Planning Act could and would be made to work. I like to think that the Central Land Board are now firmly on their feet. We have collected close on a million claims, and we have issued our main policy on development charges in the form of Practice Notes. I hope I may say without undue optimism that we are beginning to gain the public confidence which I have always tried to achieve.

The written word is often inadequate, but I want to place on record, with all the emphasis at my command, my thanks for the help and goodwill the Board and Commission have received since the beginning of their separate existence from your Institute and from professional men throughout the country. I can say no more than this: had it not been given so generously my work must have been rendered impossible. I know that my successor will be equally fortunate.—Yours sincerely,

MALCOLM TRUSTRAM EVE

Tunbridge Wells Building Week

The exhibition in connection with the Building Week at Tunbridge Wells was opened on 19 September by the Rt. Hon. Charles W. Key, Minister of Works, who stressed that the occasion was one of real importance to all connected with the building industry. In the afternoon Sir Lancelot Keay lectured on *The Architect and the Building Industry*; his lecture will be found on page 537 of this issue. Mr. Key took the chair, and the President, R.I.B.A. was also on the platform.

The stands in the hall showed exhibits from the Ministries of Town and Country Planning, Agriculture, Fuel and Power, Labour, Health, and Works. The Building Research Station also had a stand.

A small exhibit labelled 'The Architect', contained photographs, drawings and models showing examples of post-war work in south-eastern England. Although modest in size, and confined to buildings either completed or under construction, this exhibit showed the good quality of the work architects have been able to put into execution, despite shortages and restrictions. Models of projects, made by some of the architectural schools in the area, showed careful work, and were in good company with some excellent small-scale models of building construction, done by the technical colleges.

One of the objects of the Building Week was to give the public some idea of what goes to a building, and there were many samples of materials, mechanical appliances, and models on view. The week ended with a conference under the joint chairmanship of Mr. A. B. Knapp-Fisher, Vice-President, R.I.B.A., Sir Luke Fawcett, President of the N.F.B.T.O., Mr. Norman Longley, President of the N.F.B.T.E., and Mr. A. M. MacTaggart, President of the Federation of Civil Engineering Contractors.

Sir Reginald Stradling

For reasons of health Sir Reginald Stradling [*Hon. A*] has relinquished his post as Chief Scientific Adviser to the Ministry of Works and has been appointed Dean of the Military College of Science at Shrivenham in Wiltshire. Sir Reginald first became known to architects as Director of Building Research. During the war he was Chief Adviser to the Research and Experiments Department of the Ministry of Home Security. At the end of the war he was transferred to the Ministry of Works. Essentially a hard worker, Sir Reginald has now returned to his earlier work under peace-time conditions which his many friends hope will prove less strenuous for him.

William Ernest Wanmer

We regret to record the sudden death at the age of 64 of William Ernest Wanmer, for many years a member of the R.I.B.A. staff. Mr. Wanmer joined the staff of the Advertisement Department of the R.I.B.A. JOURNAL in 1933 and, at the outbreak of war, transferred to the general office staff, where his work was chiefly for the Board of Architectural Education. He was a conscientious and painstaking worker, of quiet disposition, and meticulously thorough in all he did. His services were invaluable in the enormous volume of the Board's work of the post-war period.

R.I.B.A. Diary

FRIDAY 7 OCTOBER TO SATURDAY 29 OCTOBER INCLUSIVE. WEEKDAYS 10-7, SATURDAYS 10-5. Exhibition of Italian Architecture. (Photographs by Ralph Deakin.)

TUESDAY 1 NOVEMBER 6 P.M. Inaugural General Meeting. Address by the President.

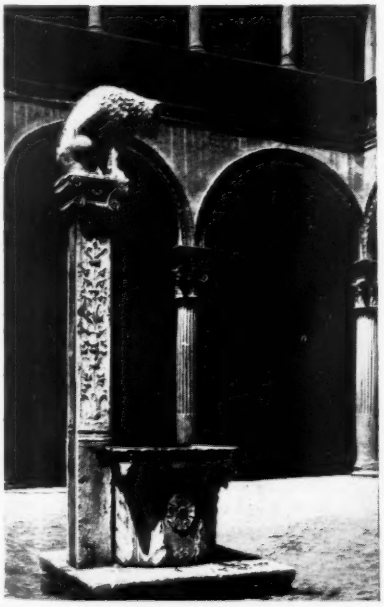
TUESDAY 15 NOVEMBER 6 P.M. *Second Thoughts on Planning*. The Hon. Lionel Brett, M.A. [*A*].

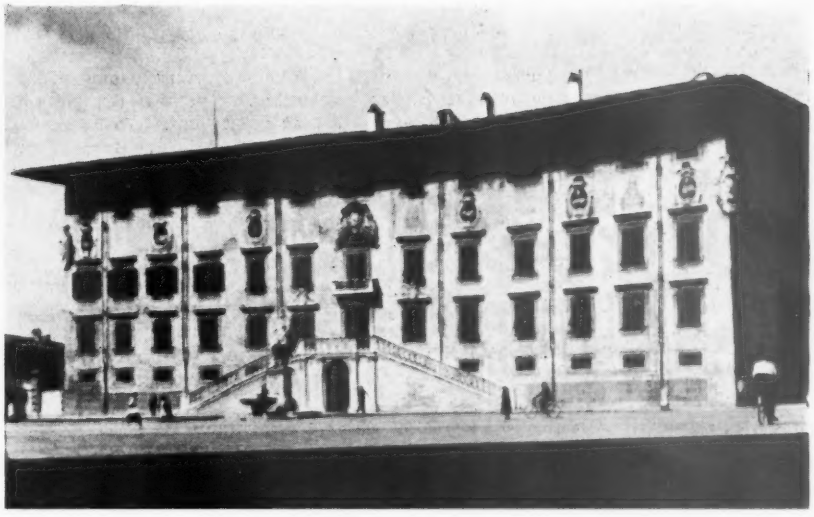
MONDAY 14 NOVEMBER 6.30 P.M. Joint M.O.W. and A.S.B. Lecture. *Changes in Building Technique*. R. Fitzmaurice, B.Sc.(Eng), A.M.I.C.E. [*Hon. A*].

Exhibition of Italian Architecture at the R.I.B.A.

ON 6 OCTOBER Lord Rennell of Rodd officially opened the exhibition of photographs of historic Italian architecture at the R.I.B.A. These have been selected from a collection made over many years by Mr. Ralph Deakin, Foreign Editor of THE TIMES. Mr. Deakin does not claim to be either an expert photographer or to possess special architectural knowledge, but it will be obvious from the few examples here reproduced that he has the selective eye of the artist, a fine sense of composition and uncommon skill with a camera. As Lord Rennell said, the wealth of fine architecture in Italy is so great that the absence of those buildings unfortunately lost in the war is hardly noticed by a visitor. That so many have survived is in no small measure due to the Sub-Commission on Monuments, Fine Arts and Archives, whose officers accompanied the Eighth Army and, with the willing co-operation of local experts, saved many damaged ancient monuments from collapse or irretrievable damage by weather. Several members of the R.I.B.A. served as officers of the Commission, and it is appro-

continued on page 513





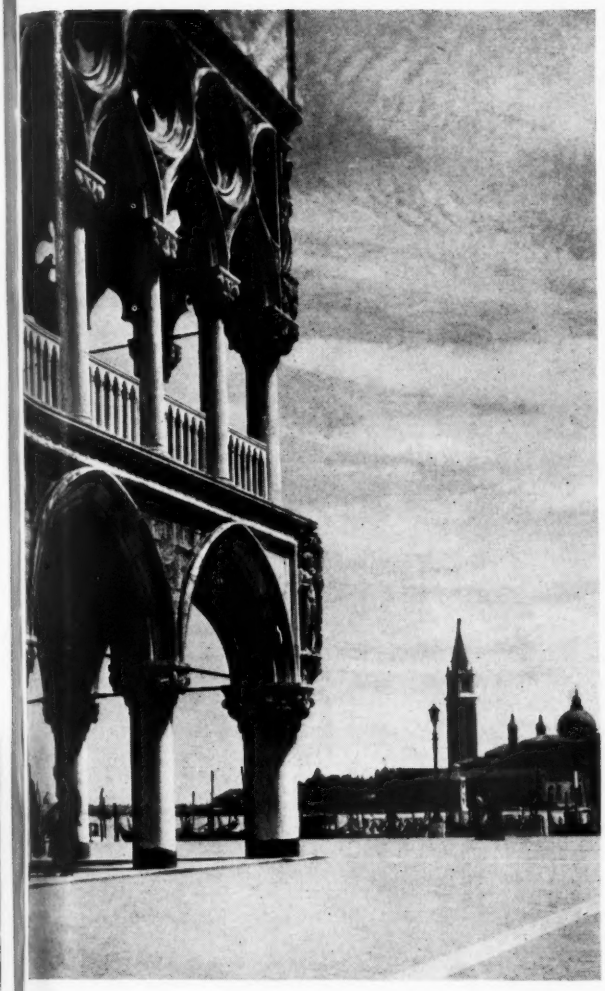
Top right: St. Peter's, Rome, with one of the fountains. Above: The Wolf Fountain of the Palazzo Bevilacqua, Bologna (1482). Right: Palazzo Carovana, Pisa (1562)

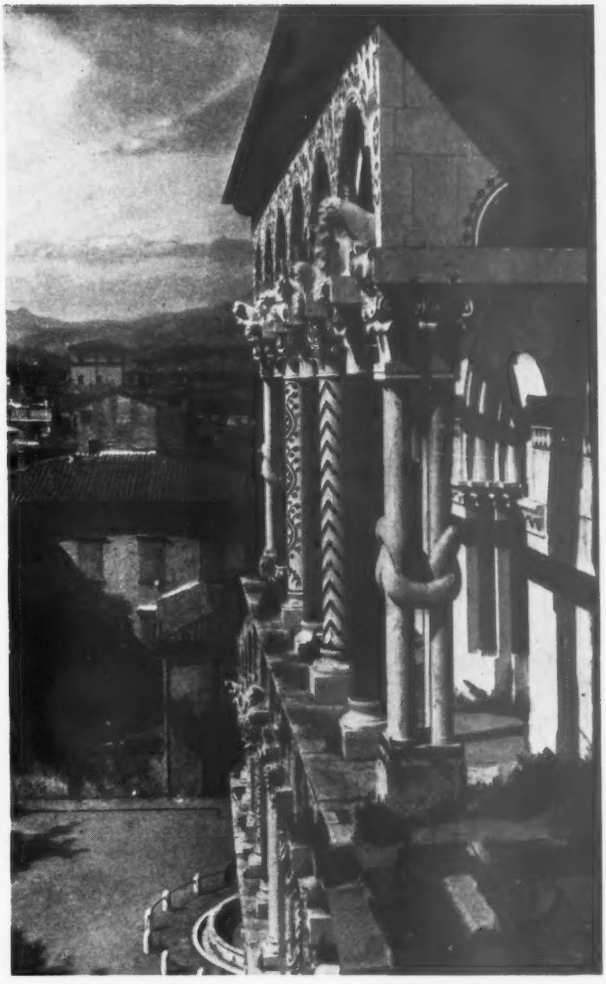
Prato Cathedral and Renaissance fountain

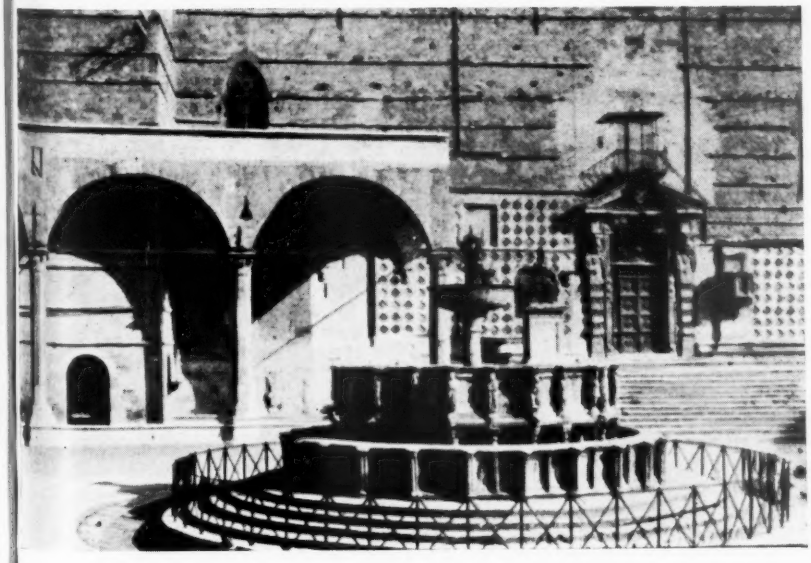
Scaliger Castle and fortified bridge on the Adige, Verona (1355)

Perugia Cathedral. Statue of Pope Julius III

Palaces on the Grand Canal, Venice







Top, left: Venice. Corner of the Doge's Palace. Above: Lucca Cathedral (13th century)

priate that one of them, Mr. R. E. Enthoven [*F*], was the chairman of the R.I.B.A. sub-committee which selected and hung the exhibition.

Mr. A. B. Knapp-Fisher (Vice-President), who was in the chair, emphasized the debt which English architecture owes to Italy. This fact is clearly shown by the very wide range of famous buildings illustrated, many of which are familiar to English architects, even to those who have never seen them other than in drawings and photographs. This debt to Italy began, as Mr. Knapp Fisher said, with Inigo Jones, and has continued to grow up to the present day. Lord Rennell pointed out the unfailing excellence of Italian architecture throughout the centuries; so strong is the tradition of good design, he said, that the Italian architect and craftsman could hardly avoid creating a thing of beauty.

Perugia. The Fonte Maggiore (c.1280)

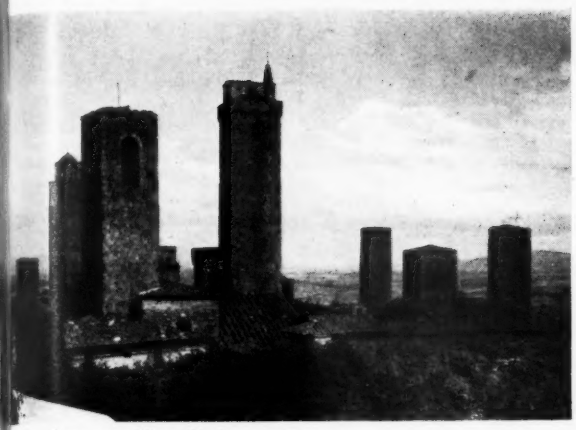
Above: A road up into Siena

Top right: Venice, Isola di San Giorgio and the Lido

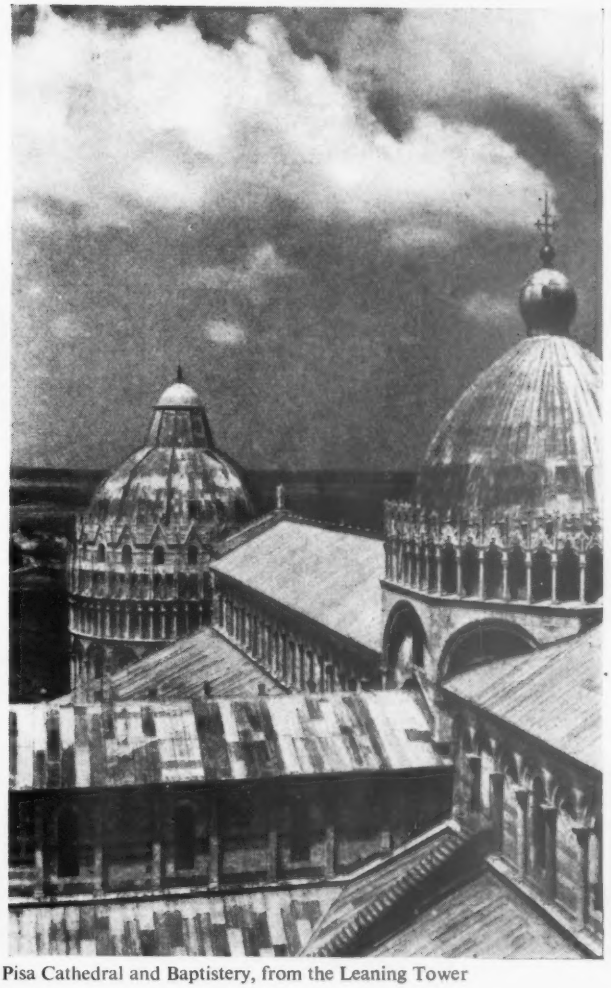
Right: Church and monastery of S. Francis, Assisi

Below, right: Piazza del Carmine, Florence

Below: A Perugian street



Mediæval towers of San Gimignano, Tuscany



Pisa Cathedral and Baptistery, from the Leaning Tower

Below: The Spanish Chapel of Santa Maria Novella, Florence. Andrea da Firenze's frescoes (c.1365)

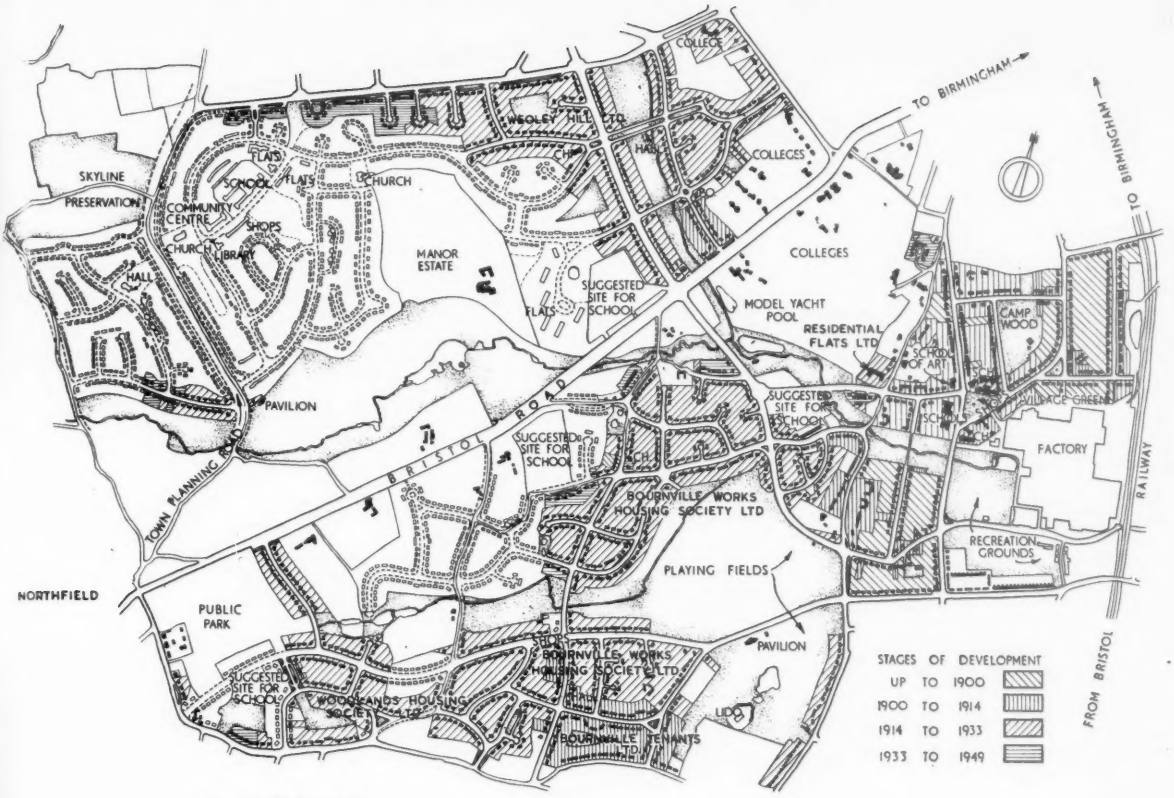
Below: Ancient Rome. Arch of Septimius Severus (A.D. 203), with view along the Forum to the Arch of Titus

Above: Florence. S. Lorenzo

Left: Segesta, Sicily. Temple of Ceres (5th century B.C.)

Above: Verona. Roman Bridge (destroyed by retreating German armies, 1944)

Below: Drawbridge to Scaliger's Castle, Verona

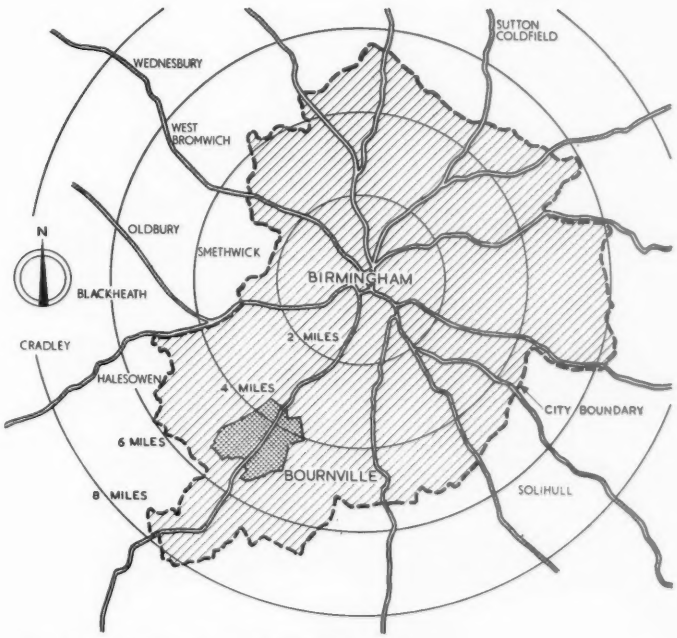


Lay-out of the estate

Bournville Village Trust

MUCH TODAY IS being thought, spoken and written about new towns, and there are several at present under construction in this country. Such a town, if more or less completely built up within the 20 years envisaged under the New Towns Act, must be something of a 'period piece'. It is true that many changes in the technique of housing, its design, construction, detailed planning and general lay-out can occur as the town is developed, but in general it must be the expression of one epoch.

Rather different is the new town which is an extension of an existing community. It should retain much of its original character of indigenous growth. Variety in it is obtained by accident, by development of ideas in several generations of men, and by changes in building technique and craftsmanship and not, as must be the case with the 20 year town, by forced attempts at variety by one set of designers. These designers, restricted to current ideas, techniques and finance, can do little more than



Map showing Bournville in relation to Birmingham

take advantage of accidents of site and vary the heights, shapes and colours of dwellings that are inescapably similar. A general sameness must result from this, so that when one has seen some half-dozen house groups one will, in effect, have seen the lot.

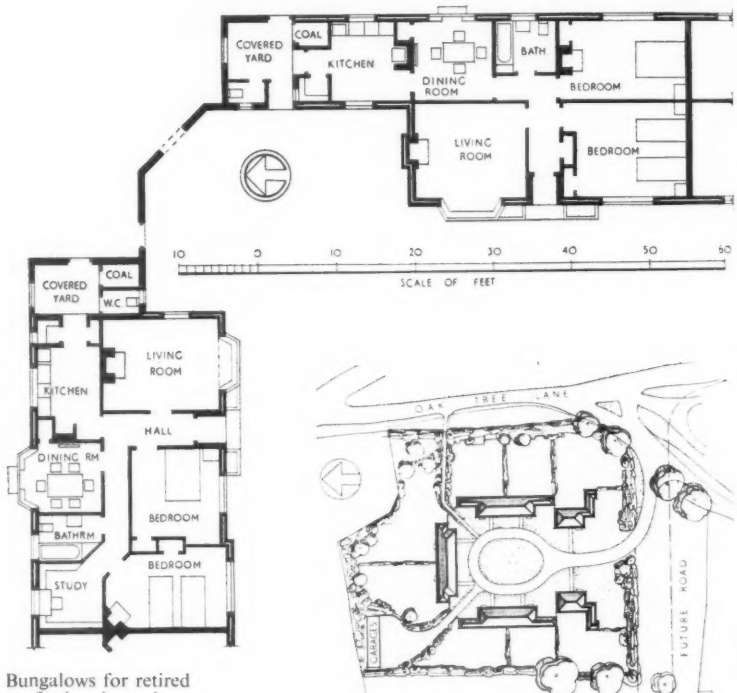
Intermediate between these two types is the deliberately planned town which has taken more than half a century to build. Bournville is an outstanding example of this third type. It is evolutionary over a relatively short period, but nevertheless totally planned. It, therefore, presents features which merit attention by town planners and specialists. The methods and organization of the architectural and management services which have been evolved, also merit study.

Outline History of the Trust. In the decade beginning in 1880 George Cadbury began to build houses at Bournville as a private venture, and from this nucleus the estate has developed to its present size of some 2,500 acres. In 1900 George Cadbury conceived the idea of forming a Village Trust. By that time the estate comprised about 350 acres, some 300 houses had been built, and the plans of the original village laid down. In setting up the Village Trust a deed of foundation was executed whereby George Cadbury renounced all financial interest in the property and placed it in the hands of a body of trustees who were charged with the responsibility for future developments. The trustees were given further powers which permitted them to engage in other activities concerned with the betterment of housing conditions anywhere in the British Isles. Thus the trustees have been able to buy agricultural estates, to finance a town-planning lectureship, and to engage in housing and town-planning research.

After the 1914-18 war, building on the land administered by the Trust was influenced by the work of public utility societies, who took land on lease; their affairs were governed by their own committees but the Trust prepared the lay-out plans and designed the houses. There was also the work of the Birmingham Copec House Improvement Society, which was founded in 1925 to deal with the reconditioning of some of the slum houses in the city, and for this work the Trust acted as consulting architects.

This brief historical outline shows that the Trust is concerned with a wide range of subjects coming within the province of housing and town-planning; this has given the architects' department exceptional opportunities for studying the subject in all its aspects. During the course of development of the estate the department has gained valuable experience from contact with those who use the buildings designed by the department, and is able to take a broad view owing to its close association with other departments of the Trust concerned with finance, agricultural estates, maintenance of natural amenities, and the repair of houses, shops and other buildings. In particular, useful experience has been gained from the work of the direct labour building department, and as the repair of houses falls chiefly on the architects' department it is able to look at the matter from a broad angle, and to assess the economics of using good materials in the best way against the policy of lesser first costs involving more expensive maintenance.

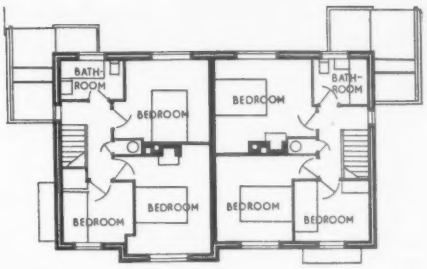
Model of part of the new residential unit to be built on the north-west corner of the estate



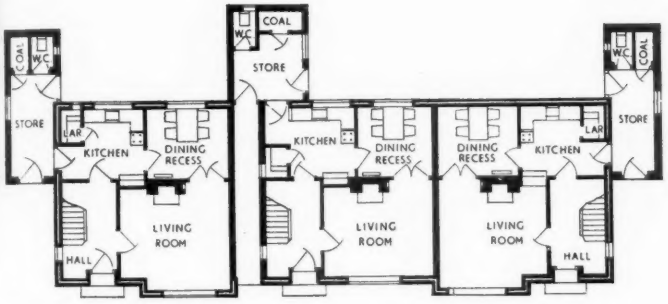
Bungalows for retired professional people
Above: Plans
Right: Lay-out

The Architects' Department. The architects' department now deals with an estate which was begun some sixty years ago and has been expanded at different times, partly under the influence of various bodies moved by their own particular interests. Although the planning of the estate has

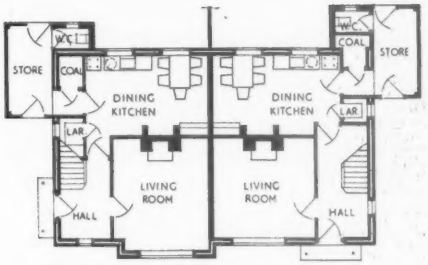
First floor



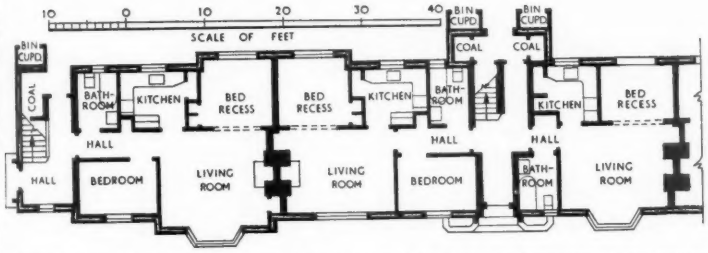
First floor



Ground floor
Block of three houses on a corner site



Ground floor
Three-bedroom semi-detached houses, built in 1945



Ground floor of part of a terrace of two-storey flats for single women. Birmingham Copec House Improvement Society

Ground floor of two-storey flats for older persons. First floor similar

always been guided by thought for the future, there has been no attempt to lay down a master plan; the department has prepared provisional plans for the whole estate, and as the time has arrived for each area to be developed the problem has been studied afresh in the light of the most recent trends of thought, and from experience the department is convinced that this procedure is the right one and that development plans should allow considerable elasticity.

An instance of this is the site on the north-western corner of the estate, which is shown in dotted outline on the accompanying lay-out plan. This is the largest single undeveloped area on the estate, and it covers some 300 acres.

It was decided to develop this portion as a single residential area, and a plan was drawn up some 14 years ago, but before construction could be begun the war broke out. When the time came to take up the project once more it was necessary to study the problem again, as in the meantime new conceptions of neighbourhood planning had been advocated. Accordingly a new study of the area was made, and the department prepared surface utilization maps showing the land-use of the adjoining areas; these were of use in considering such questions as accessibility to existing shopping centres, schools, bus routes, and communal buildings. A new sketch plan was prepared, and further close study led to the conclusion that the social centre must be re-sited; the revised scheme met with the immediate approval of the trustees, and it was felt to be a great improvement on the original plan. This procedure is a typical example of the way in which the department works when dealing with major developments at Bournville, and it enables the architects in the department to interpret more adequately the needs of those for whom they design and build.

The gradual development of the estate has allowed the department to experiment with different forms of lay-out; these have been influenced by rising costs, especially the expense of road construction, and the conclusion has been reached that—from the point of view of cost—buildings must be so arranged on the site that the length of traffic-bearing roads is reduced to a minimum, although this must not be done at the expense of inconvenience to the residents. The department therefore proposes to try various arrangements in order to study and assess their relative values regarding convenience, cost and æsthetics.

Landscape Treatment. The landscape treatment of urban localities is another subject in which the architects' department is experimenting, as it is felt that knowledge is still inadequate. In the early days of the Trust landscape treatment was confined almost solely to the preservation of existing features and to tree planting, but latterly a policy of deliberate creation has been adopted so that, with the general lines of development settled, it has been possible to plant small woods and tree belts and to link them with the hill slopes and valleys and other natural features. Here again the

development of the estate as semi-independent residential units, built at different times, has provided special opportunities for adopting new ideas and comparing them with the old.

Research. The experimental outlook has always governed the work of the Trust, and in this direction it has been helped by keeping in touch with other organizations engaged in housing and town-planning, but it was not until 1935 that the Trust really took up research, beginning with a study of housing conditions in Birmingham, especially with regard to journeys to and from work.

In 1941 the West Midland Group on post-war reconstruction and planning was set up; the Trust was associated with that work through the chief architect, who acted as secretary to the Group, and two town-planning surveys have been produced as a result of the research; 'English County', a survey of Herefordshire; and 'Conurbation', a study of Birmingham and the Black Country.

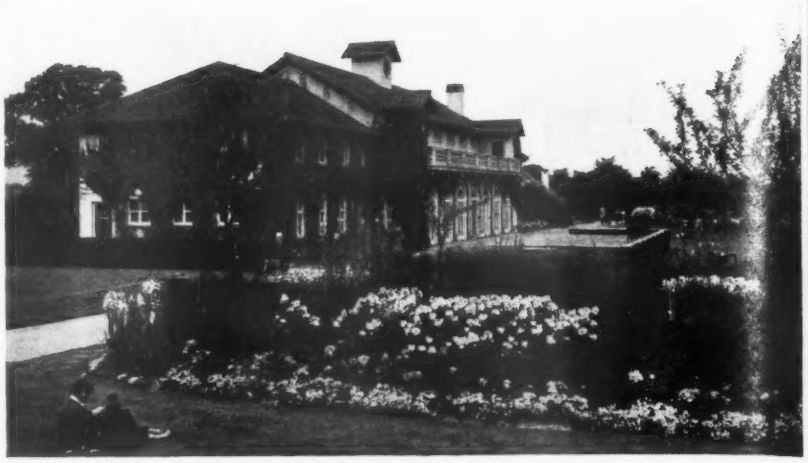
The Estate and Its Buildings. A feature of the estate is the parkway system, which follows the valleys and helps to give boundaries to the various residential portions. Streams run through this parkway, expanding here and there into little lakes and flanked at one part with a model yacht pond.

In the provision of social facilities the physical characteristics of the land and the manner in which development took place suggested that the needs of the residents would be served better by dispersion than by concentration, but in building the portion in the north-west part of the estate the communal buildings will be brought near together.

The problem of the provision and siting of shops has been eased to some extent because Bournville happens to be situated between four well-established shopping centres, and so it has not been necessary to provide more shops than those needed for day-to-day requirements.

In laying out the residential area to be built in the north-west part of the estate account had to be taken of the steeply-undulating nature of the land; further, a wide town-planning road has been scheduled which passes through the site and divides it into two unequal portions. Although this road has certain disadvantages they have been lessened to some extent by the provision of open spaces on each side, so that the bisection is not so obvious as it might otherwise have been. A subway gives pedestrians access to the community buildings, the shops and the school; these all front on to a promenade from which wheeled traffic will be excluded. Pedestrian ways will link all parts of the estate.

As the Trust prepared the lay-out and designed the houses to be built on land leased to public utility societies and other bodies, each having their respective objectives, the estate as a whole is a mixed community and contains families with a wide range of income levels; some of the houses have been built for private indivi-



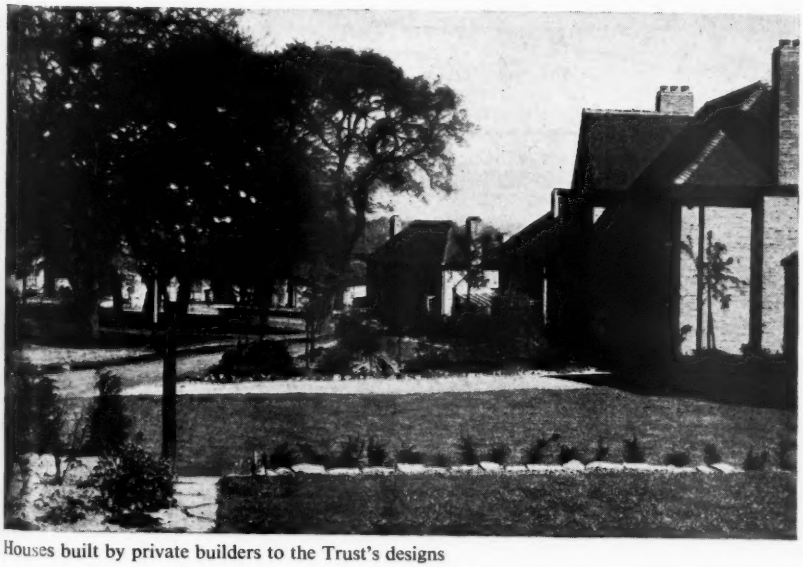
Pavilion in Messrs. Cadbury's playing fields. Erected in 1924

First houses built at Bournville, in 1879. Designed by George Gadd

Houses built in 1945

Larger houses on the Weoley Hill Estate

Residential flats for business women. Built in 1923



Houses built by private builders to the Trust's designs

duals, and a number have been erected by the Trust itself. Thus there are houses with accommodation similar to that provided by local authorities, as well as some of comparatively large size, and groups of dwellings for old people and single persons.

From the plan of the flats for single professional and business women, designed for the Birmingham Copec Housing Improvement Society by the Trusts' architects' department, it will be seen that they are not all identical, as some contain the most useful addition of a separate bedroom for guests, while all have a bed recess leading out of the living-room, which does away with the inconvenience of the bed-in-living-room type and at the same time makes use of the warmth of the living-room. The use of this arrangement in schemes in other parts of the country suggests that it has been found acceptable to the residents.

In the process of development of the estate the architects' department has inclined to a grouping of buildings more formal than that adopted in the original village; this is illustrated in the block of three houses and in the group of bungalows for retired professional people, situated in a secluded part near the north point on the lay-out plan.

In the three-house unit and in other plans illustrated here, the latest, and very desirable, practice of giving covered access to outbuildings has been adopted, thus taking away from winter fuel-getting one of its unpleasant features.

The problem of separate fuel-storage has been neatly solved in the two-storey flats for old people, where the respective fuel receptacles are separated and distinct; a small point, perhaps, but one that will surely be appreciated by the tenants. The plans of the bungalows show a convenient arrangement of good-sized rooms with the added advantage of a second w.c., which has been placed near the kitchen.

In construction the houses follow the usual practice of cavity walls, and so on, and the furnishings are good without being extravagant.

Many of the houses built before 1914 were designed by Mr. W. Alexander Harvey [*F*], and it may not be inappropriate to end this article with a quotation from his book, *The Model Village and its Cottages, Bournville*. He wrote, 'If it be asked, with regard to the problem of the housing of the people, what is Bournville's contribution towards its solution, it would be stating its claims at the lowest to say that it stands as an example of what the village of the future may be, a village of healthy homes amid pleasant surroundings, where fresh air is abundant and beauty present, and where are secured to its people by an administration co-operative in nature numerous benefits which under present conditions are denied them elsewhere'.

The material for this article has been supplied by the chief architect to the Trust, Mr. C. Bertram Parkes, M.B.E. [*L*], under whom the work of the department is divided into sections dealing respectively with housing, special buildings, and surveying, each being in charge of a qualified architect.

Natural Lighting in Factories

By William Allen [*A*]

A Paper read at the R.I.B.A. Industrial Architecture Conference, March 1949

Mr. W. A. Allen [*A*]: In dealing with natural lighting, one has not the advantage of being able to draw on a scientific study of lighting over a long period of time. Only in the last few years has a real attack been made upon it, and in respect of factories it has hardly been touched.

I should like to draw attention first of all to the somewhat curious point that no clear tradition has ever established itself in factory design. This suggests to me that the basis of criticism has not been explicit enough for architects to decide definitely that one type of roof was more suitable than another. The common north-light roof was in fashion for rather a long time. Its chief merit is that it keeps out sunlight, which may be necessary for some industries, but probably is not so for a large number of others. Then, of course, extensive use has been made of the common double-pitch roof, probably for no reason except simplicity. In the United States, and latterly in this country, we also find what is called the 'monitor' type of roof in which you have long panels of vertical glazing set opposite one another in raised bays. No one, I think, knows why it is called 'monitor', but it is a short term which seems to be becoming popular; these are the three main systems in use, and I shall compare them in various ways and attempt to arrive at some general trend of good practice, and a more accurate basis of criticism, recognizing that we have a fair distance to go yet before experience and scientific work carries us to the stage which is necessary for accurate prediction of desirable results; and recognizing also that the requirements of industries as regards natural light have not been classified in any way except occasionally from the point of view of the admittance or exclusion of sunlight.

We can conveniently begin by comparing the amounts of light admitted by factory roofs of the different types.*

Fig. 1 shows the common double-pitch roof with a single panel of glazing on one side. The curve showing sky factors is somewhat variable. It is probably true to say as a generality that a single panel of

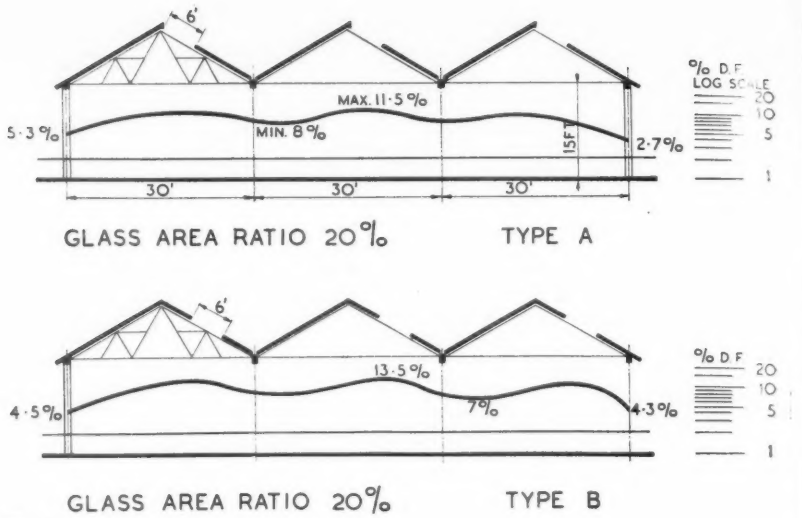


Fig. 1

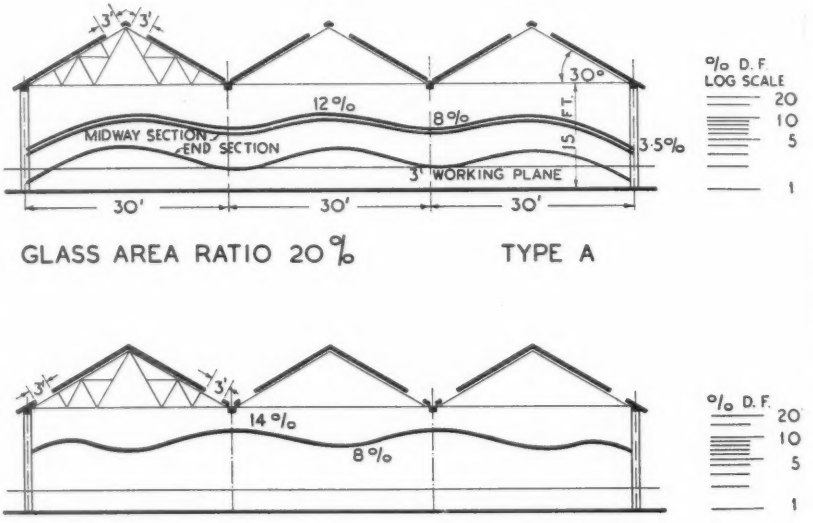


Fig. 2

* See also Bickerdike, J. B., in the R.I.B.A. JOURNAL for September 1948.

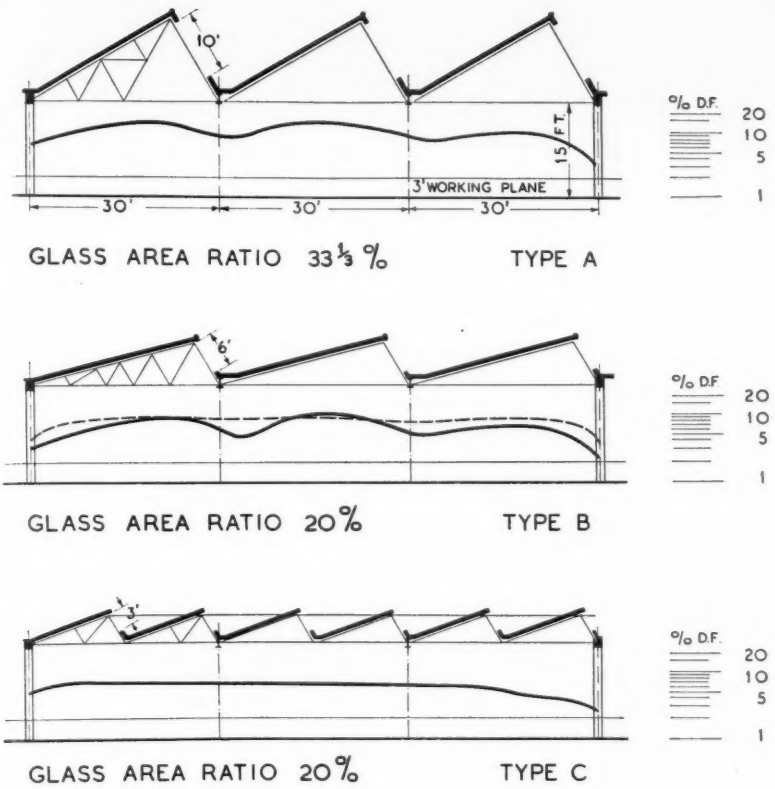


Fig. 3

glazing on one side of a sloping roof does not give a uniform curve very easily unless the whole roof is up fairly high.

Fig. 2 shows the double-pitch roof with the same area of glazing disposed equally on each side of the roof. It is possible without any difficulty now to put glass in a position in which uniform distribution is obtained.

Fig. 3. This is the old familiar north light. The glass area ratio in the first case is about 1 : 3 instead of 1 : 5, as in the previous roofs. It is put in because the typical proportions of this roof give a much greater amount of glass than you would get with an ordinary double-pitch roof. The interesting thing is that the amount of daylight admitted is the same, and it is generally true that the steeper the glass the less the light which is admitted. It is a characteristic also of north-light roofs that you tend to get peaks and troughs rather sharply in the distribution curves; they can be removed by raising the roof or increasing the frequency of the serrations of the roof, as in type C on the figure.

Fig. 4. Here we have the monitor roof in three different versions. It is possible to obtain uniform distribution, but the best arrangement is not obvious. One's first instinct seems to be to put the glazing far apart, but by looking at the different examples it will be seen they have to be fairly close together, not more than one-half to one-third of the bay span. Intensity is low with vertical glazing, but example C shows how it can be raised by the judicious use of sloping glazing. C is, in fact, a promising modification of the monitor system, which is half-way to a north-light roof. It was devised at the Building Research Station for factories on the Team Valley Trading Estate.

Direction of Light. There are several other important factors to be taken into account besides the amount of light. One is the direction of the light admitted, and on this the Americans have recorded their experience quite explicitly. They say that with the north-light roof, giving light mainly in one direction, you have a very constraining system, in so far as you may not light both sides of the object upon which you are working. If you are using a production line, this means that good lighting of the objects on the line can only be obtained if the line is run at a right angle to the glazing. If it is run parallel to it you find that one side of the line is light and one side is not. That, of course, is a serious disadvantage in layout, and it seems to have been the main incentive so far as the Americans were concerned to use monitor lighting. I think it is fair to say that light from two sides or two directions is probably essential for production line layout, and it is probably desirable for a great many other objects not made on production lines.

The double-pitch roof with glass panels on each slope might give suitable two-directional lighting, but the shadows downward may be so severe that the undersides of objects get too dimly lit. That may be one of the reasons why it has not found favour in the U.S.A. as an alternative to monitors.

A useful modification of many existing north-light roofs would be to insert panels of glass near the base of the south slope, where they will be shadowed from the sun.

Sunlight. With regard to sunlight, it is perfectly clear when comparing the different roof systems that those with glass on two sides have no chance of excluding sunlight, and that those with north-light only can do so without any difficulty. We do not know how much importance to attach to this point. There are some industries where sunlight cannot be admitted. High precision work can, for instance, be affected dimensionally by sunlight. There are other cases where, as for instance in the cotton industry, they rely to some extent on very primitive systems of air conditioning which serve their purpose well enough, but which might be made troublesome by sunlight through changed temperatures and humidities.

For the rest, the argument which is advanced against sunlight is that sharp beams and shafts of light falling across a factory have considerable irritation in the way they light the work. It is commonly spoken of as glare, but it is a mixed business of glare and bad shadowing. This is something on which we need a great deal more information, but I do not see why the use of distorting glass on the South side should not diffuse the beams sufficiently to make this question of sharp shadowing and disfiguring rather unimportant, though it would depend upon using the correct glass. The essential point is to diffuse the beam without getting the glass itself bright. Frosted glass would not do, for instance. We will welcome any information which can be sent to us on the question of sunlight in factories, because it may be critical in developing the shape of a roof.

Glare. If one compares the factory roof types in respect of glare, there are a number of general points which one can usefully mention. In the case of a system which gives light from one side only, there are always going to be a great many shadows. There will be long shadows from all sorts of machines, and there will be a vast amount of dark area around the base of the machines, working parts, and so on. The whole of the bottom part of a north-lit factory is often quite dark, and this adds to the general sense of gloom, dirt and glare. Glazing which admits light from two directions is obviously likely to be an improvement in this respect, and the monitor roof in particular gives freedom from bad shadowing.

Another important point about glare is the area of view of sky which the operative gets as he works. With a north-light roof

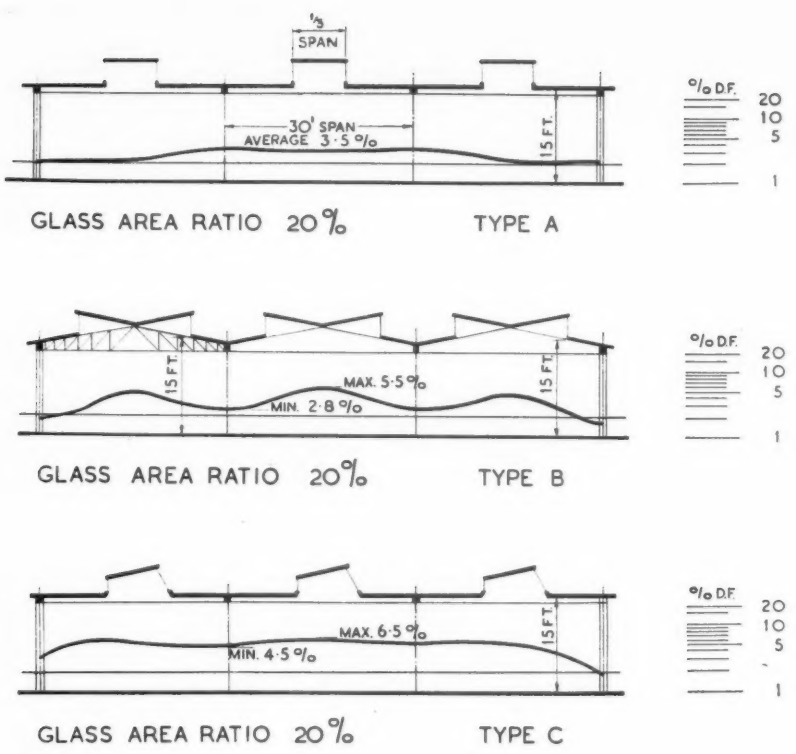


Fig. 4

you can face away from the light and be very comfortable. With a monitor system the areas of sky seen will be greater and to some extent impossible to avoid, though the system is usually found to be reasonably comfortable. The shallow slope of the double-pitched roof on the other hand makes it certain that the operative has a view of large patches of sky while he works, and there is no doubt this often causes uncomfortable glare.

One other useful comparison is between large areas of glass and dispersal into a large number of small units. I am thinking of the kind of factory where one has a series of lights arranged all over the roof. They are usually individual panels of glass let into individual sheets of roofing material, and they are scattered over the roof area. When we have visited factories of this kind, we have noticed that although the distribution of light is very good and there is no intensive shadow around the bottom of the factory, there appears to be a curious quality of irritation and discomfort arising from the division of the glass into these different panels. I have seen some cases where it actually twinkled and was extremely irritating, especially where the surface of the underside of the roof was black. That is a matter which has not previously been discussed, I think, and we are going to examine it in the laboratory and endeavour to discover why one should have so much irritation from such an arrangement.

Shapes of factory roofs can play a big part in reducing glare. One of the causes of discomfort is the juxtaposition of dark, shadowed areas and bright views of sky, and the sharper and closer the juxtaposition the greater is the irritation.

An important point therefore is to have roofs shaped so that surfaces near the glass get well-lighted. The north-light roof is fairly successful in this respect because the reflected light off the roof outside lights the slope inside. The monitors of types B and C in Fig. 4 also benefit in this way. The double-pitched roof on the other hand is often uncomfortably dark on the underside, and particularly so if the floor is not clean enough to reflect light upwards.

One last point in connection with glare concerns the use of colour. Many factories are to be seen where for some reason or other the management have decided to pick out a pattern on the window bars in some gay colour. I have seen them picked out in red and green, and black. It is very important to reduce all contrasts around the source, and it will always pay to keep window bars and the window surrounds white. No other colour is really a wise choice unless you are perfectly certain of the effect you are going to produce.

Dirt. Published American experience on dirtying of factory glazing is valuable. They make two points concerning monitor lighting and vertical surfaces generally. One is that vertical surfaces do not get dirty so readily as sloping surfaces, and the other, that vertical surfaces are, on the whole, easier to clean, particularly with monitor lighting where you can have a tipping arrangement for the glass so that it can be cleaned from the outside by standing on the roof. The Americans also make a point which is quite interesting, namely, that most of the dirt—a proportion of about 3 : 1—often occurs on the inside of the glass as compared with the outside.

Summary. Let us consider what we get out of all this.

We have a broad comparison between three different roof types in terms of the amount of light they admit, and we find that the north-light and the monitor admit less than the shallow sloping glass on the double pitched roof, area for area.

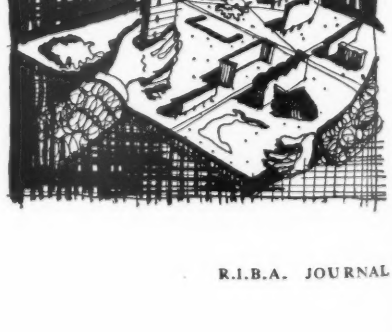
Then in respect of the direction of light we find that the cross-lighting from a monitor is likely to have substantial advantages over the north-light, and even over the double-pitched roof.

About sunlight we noted the possibility that many factories which excluded it might well tolerate it and even find it a good thing from the operatives' point of view, though shafts of sunlight should be diffused. This is something on which managements could help by sending records of experience to the Building Research Station.

Then, concerning glare, we observe that while the north-light roof led to shadowing, which is bad, it was otherwise satisfactory if operatives need not face the light. Monitors are apparently not bad, but the double-pitched roofs seem likely to be troublesome, especially with dispersed roof lights.

Finally, in respect of dirt, American experience was noted as pointing towards the use of the vertical glazing and the monitor because the rate of dirtying was lower, and because cleaning was easier.

It is perhaps unwise to press this analysis very much further at the present time. It may be possible to make all three systems work well in some circumstances; but if I were to be tempted to say which system offers the best prospects for general development, I should, I think, mention the monitor first. It has a vital advantage of light from two directions, and it should be possible by proper design to raise the amount of light to a reasonable level for most purposes, but it must be used with understanding.



The North East Polder Holland

An account of the planning and new town construction in 186 square miles of land reclaimed from the Zuider Zee and added to the territory of the Netherlands

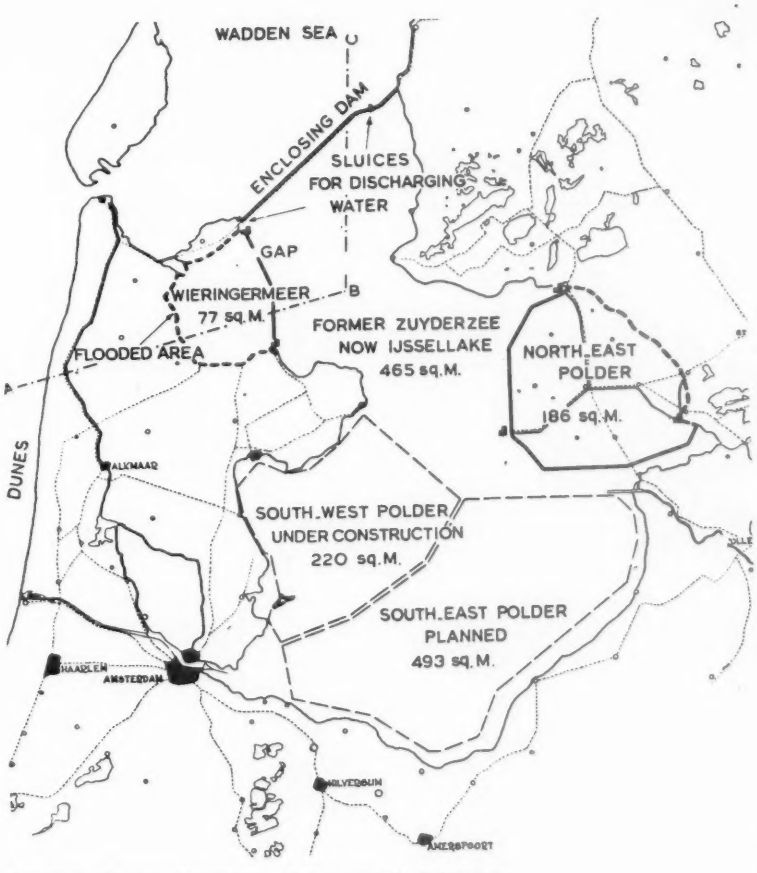
IN THIS COUNTRY we are accustomed to planning schemes which perforce have to be made to work in terms of existing physical features and long established human settlements. Radically different is the planning of an area reclaimed from the sea. At the outset there are no physical features, no streams, no hills (unless there have been islands), no vegetation—nothing at all but one vast muddy plain surrounded by an enclosing sea wall. Where does a planner begin? His problem is akin to that presented by that 'ideal' site which used sometimes to be given in programmes in schools of architecture, a flat plain of almost unlimited extent. Such a site is the hardest of all to deal with because there are no starting points, no physical characteristics but unrelieved flatness, nothing on which the imagination can seize. Such was the problem presented to Netherlands' planners when the North East Polder began to appear from the old Zuider Zee.

The North East Polder reclamation scheme is part of the much larger project of reclaiming most of the Zuider Zee which began with the construction in 1932 of a big enclosing dam across the mouth of the Zuider Zee. This had the effect of turning this inland sea into a fresh water lake, the salt water which at first poured through the sluices in the dam being gradually replaced by surface water. It also controlled tides and reduced the ferocity of the storms which for generations had assaulted the older sea walls round the Zuider Zee.

The reclamation scheme is creating four areas of land: the Wieringermeer polder of 77 square miles, the North East polder of 186 square miles, the South East polder of 493 square miles and the South West polder of 220 square miles. Together these will add about one-tenth to the total area of the Netherlands. The new lake, called the Yssel Lake, is 465 square miles in area.

The Wieringermeer polder was pumped dry in 1930 and 10 years later it was completely colonized. The Germans blew two gaps in the sea wall in 1945 and the flourishing land was again under 10 to 20 feet of water, which ruined all the buildings but did not damage the land because the water was fresh. By great efforts the gaps were closed and the water once more pumped out by December 1945.

A typical reinforced concrete bridge over one of the larger canals



Key map of land reclamation projects round the Zuider Zee

The North East polder, being more than twice the size of the Wieringermeer polder, is a correspondingly more ambitious project. When complete it will have 1,700 farms. The work of the government-created North East Polder Administration (comparable to one of our new towns corporations) falls into three main divisions. The first is engineering, land drainage, road making, installing services, etc.; the second is town planning and building and the third colonization and social work.

The land was pumped out and is kept dry by three electric and diesel pumping plants. This prosaic but efficient arrangement may perhaps disappoint the more romantic-minded who would expect windmills; but the windmill is fast disappearing from Dutch scenery, which is not surprising when one realizes that one of the three pumping stations has a total capacity of 343,000 gallons per minute. The preparation of the land for cultivation is mainly a matter of getting rid of excess water from the soil. Main ship canals were dredged before the polder was dry. Into these run ditches, 5 feet in depth, which are planned to a rectangular network, forming fields of 800 by 300 metres. Still smaller temporary ditches two feet deep were dug across the fields. After the water has drained off and the land has settled, these small ditches are replaced by agricultural field drains.

The next stage was to start cultivation and to develop soil fertility by getting humus into it. At this stage, however, there were no farms and no nearby or regular labour supply so that cultivation could not be left to private enterprise. The Administration itself therefore undertook the initial cultivation, using hundreds of tractors, seed drills and combine harvesters, the land being worked in farms of 1,250 acres each.

Twenty labour camps have been built with a total accommodation for 6,000 men. The men earn good wages and great care is taken for their social welfare, regular long weekend trips to their homes being arranged, and the Administration providing recreational and other facilities, including a hospital.

The drainage ditches form a regular pattern of divisions and facilitate the creation of farms by allowing each to be a certain number of identically-sized fields. The farms when finally settled are small by British standards. They vary from 30 to 120 acres, the majority being either 60 or 90 acres. They are leased to farmers who pay a rent to the Administration, so that the State retains ownership of the land in perpetuity. The number of applicants far exceeds the number of available farms, so candidates are examined for suitability before being allotted a farm. Priority is given to those who have worked for at least two years on the polder reclamation.

The Administration also undertakes tree planting and afforestation. Three large woods or forests, totalling about 5,000 acres, are planned on areas of peaty or sandy soil not suitable for general cultivation. The main roads are also lined with trees and the farm compounds are planted with trees and shrubs.

The farms have a single large building or barn used for all storage and shelter purposes, with the farmhouse directly attached. This barn is one of the few of traditional construction

A block of four typical houses, in Emmeloord, for the middle classes. The construction is traditional

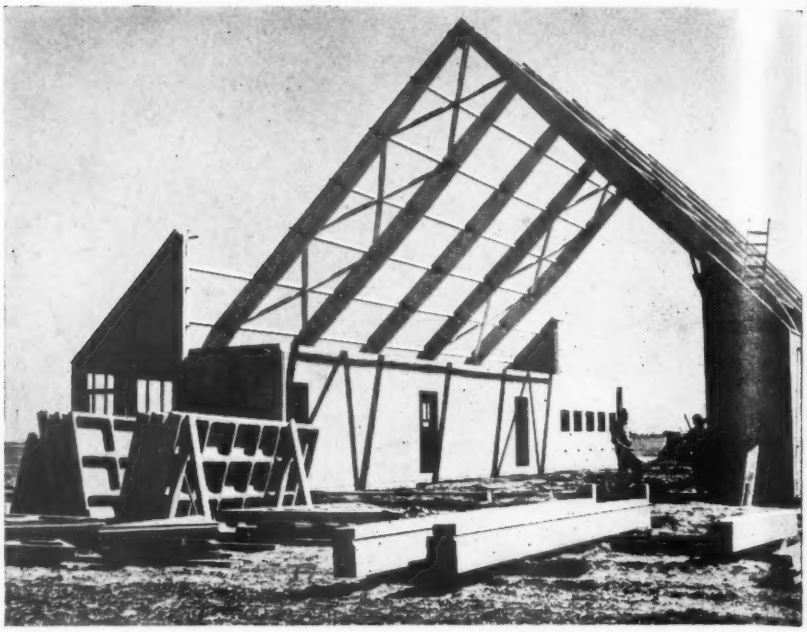
General plan of the North East Polder. The basis of the plan is sub-division into rectangular parcels of land each of 60 acres, a size which, in turn, is largely determined by questions of land drainage. Each parcel is bounded by a primary drainage ditch 5 ft. deep. Emmeloord is to be the 'county town' with a ring of ten new villages round it. The thick solid lines show the main drainage and ship canals, the thin solid lines, the secondary drainage canals, and the dotted lines, the roads

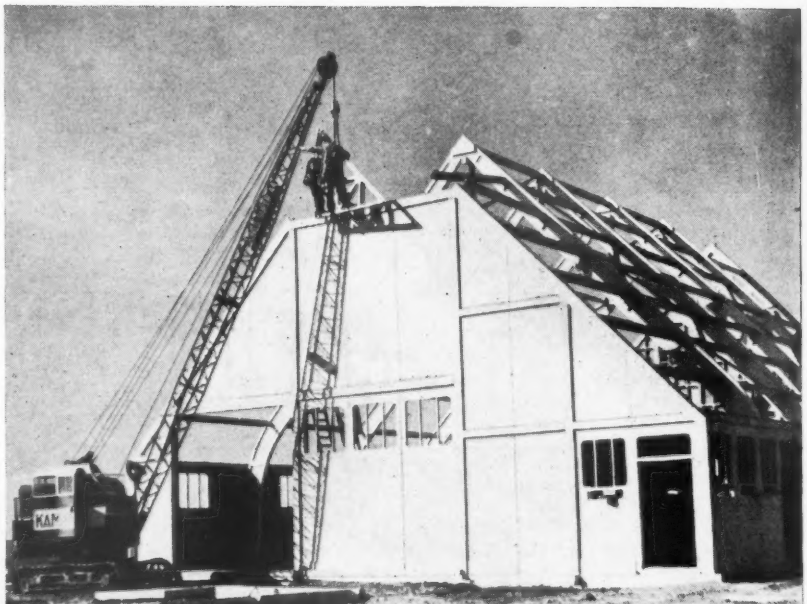
Each group of farms would naturally require central services and amenities in villages and towns. The Administration decided to plan and construct one town of 8,000 to 10,000 inhabitants in the centre of the polder at the crossing of two main roads and in association with various canals. This town has been called Emmeloord and is the first urban grouping to be started because it had been found in the Wieringermeer polder that the town or village where building first started tended to remain the regional centre. Ten villages have also been planned to contain populations varying from 750 to 2,000 according to their situation, the larger ones being located where the land is more suitable for market gardening than for general farming.

Soil consisting of clay and layers of peat will shrink for tens of years as the soil dries out, so that all buildings on these soils have to have piled foundations. Therefore while the polder was still under water, the whole of the site of Emmeloord was dredged down to an underlying sand and the resulting pit filled with sand. This will reduce very considerably the cost of building the town by doing away with the need for piled foundations.

The construction of a town and villages where there are no existing buildings at all has necessitated a very carefully balanced building programme of farms, shops, public buildings and homes in the villages so that the needs of the inhabitants can be supplied and shopkeepers earn a living as the villages grow.

The first farm buildings were of normal brick construction. These were built for the





The prefabricated reinforced concrete barns in various stages of construction. They consist of a ground frame, main frames and wall panels of vibrated concrete with timber purlins and braces cut to size. The roofs are surfaced with interlocking tiles. The whole construction is prefabricated in a factory specially erected for the purpose on the mainland near the polder

large 'reclaiming farms'. It became apparent, however, that this construction could not be used if the large number of other farm buildings was to be provided in the time required. It should be realized that the time table of construction is to some extent conditioned by the seasonal farming round. These smaller farm buildings—the great majority—consist of one large 'omnibus' barn to contain fodder, implements and animals in the winter; this is attached directly to the farmhouse and entered from it so that in the severe continental winter the farmer can do much of his work within shelter. It was decided to make the barns of prefabricated construction in order to economize in bricks and bricklaying labour. The main frames are of pre-cast concrete to which are attached wall panels of vibrated concrete. The purlins and rafters are of timber and the roof is covered with interlocking tiles. The foundations are on piles or are normally excavated, according to the subsoil, and these carry a prefabricated concrete beam and slab floor. A barn is normally erected in nine weeks. The programme envisages the building of 250 barns a year or five a week. These barns are for arable farming; a similar prefabrication scheme for stables on mixed farms is being worked out. At present the farmhouses are built of brick, but prefabrication of them is being studied.

A visitor's first impression as he crosses the fine reinforced concrete bridge over a corner of the Yssel lake is of a vast featureless plain stretching ahead for miles and dotted at regular intervals with farmhouses of identical design. There are, of course, no hedges and the eye of faith is needed to envisage the future scene when the little wispy trees, now only a few feet high, will have grown to maturity. To the British eye, accustomed to a varied rural scene, it all looks very dull. Miles away in the distance two tiny islands, Urk (with a hamlet) and Schokland (with a chapel and some old trees) rise some 20 ft. above the plain; otherwise the long, level and straight brick roads are flanked with rectangular fields between identical straight ditches, the only variation from the pattern seeming to be the differences in crops and the grouping of the cattle.

When one considers, however, the charming variety that time, the ingenuity of the Dutch people and skilful planting have given to the older areas of reclaimed land—land which must once have looked no more interesting than does the North East polder today—one begins to see the ultimate possibilities inherent in this great work. For a great work it undoubtedly is. Here is the equivalent of a small English county created from nothing but the sea. Were one to step off Lands End on to a reinforced concrete bridge leading to the lost land of Lyonesse, one would perhaps have the feeling that the Dutch people

A building for the Agricultural Loan Bank at Emmeloord

Typical layout and tree planting of a main traffic way in Emmeloord

Typical housing for workers. Practically all the housing is in terraces or low blocks of flats

Another view of a main traffic way showing how house blocks are sited end on it

possess for their Zuider Zee works. For it is a lost land reclaimed. In the early middle ages a great area of land was drowned by the sea breaking in, and the Zuider Zee came into existence. The names of the new villages are those of ancient settlements that were then destroyed. These names, the sunken wrecks of ships and hundreds of lost anchors were the only objects salvaged from this older civilization and its subsequent inundation.

The Netherlands is densely populated at 300 persons per square kilometre. The population has almost doubled since 1910. There are 40,000 trained farmers without farms to work. The reclamation for agriculture of the Zuider Zee is therefore a national necessity. It was first envisaged by Dr. Lely, a great Dutch hydraulic engineer, in the latter part of the 19th century, but it took a food shortage in the first world war and flood disasters round the Zuider Zee in 1916 to reveal to the Government the value of his ideas. Today Lely's five projects, the making of the enclosing dyke and the reclamation of the four polders, are well under way. Next year it is hoped to start work on constructing the enclosing dyke of the South East polder, a task which alone will occupy six years, to be followed by a further year for pumping the land dry.

To British eyes the regional planning of the area in a series of gridiron patterns appears rather uninspired. This pattern is, however, an inevitable result of the essential system of land drainage. It is set by the grid of drainage ditches which form the natural boundaries of the fields; farms are created from varying numbers of these equal-sized fields. The roads naturally follow the lines of the ditches and are therefore straight for the most part. Some variation from the rectangular pattern has, however, been introduced for various reasons such as changes in soil formation. The main ship canals linking Emmeloord and the villages to one another and the sea are also set in straight lines. These canals take the place of railways for the movement of heavy and bulky goods as well as serving as main channels of land drainage. The regional planning of the polder therefore arises logically from the conditions imposed by nature and is not dictated by unimaginative use of the tee-square, as might at first sight be supposed.

The town and village plans are as yet immature. The main traffic arteries, however, are set out and planted as parkways, many of the housing blocks being sited end-on to them. Although much of the housing is to be in the form of terraces, it is clear that Netherlands planners have abandoned the outworn concept of streets lined with built-up façades. Nevertheless, road traffic is never likely to be heavy by British standards; the communities will be almost entirely agricultural and the polder does not form a through route. The main roads are therefore rather narrow for the wide parkways in which they are set.

The North East polder is well worth a visit by those architects who are interested in planning and the creation of new towns and villages. They will find the officers of the Administration eager to show and explain their work and full of enthusiasm for it. E.L.B.

General view of the palace from the west, with the grand stairway and ornamental lake in the left foreground

The Palace of the 'Abbasid Caliphs at Sâmarra

By Seton Lloyd, O.B.E., F.S.A. [*A*]

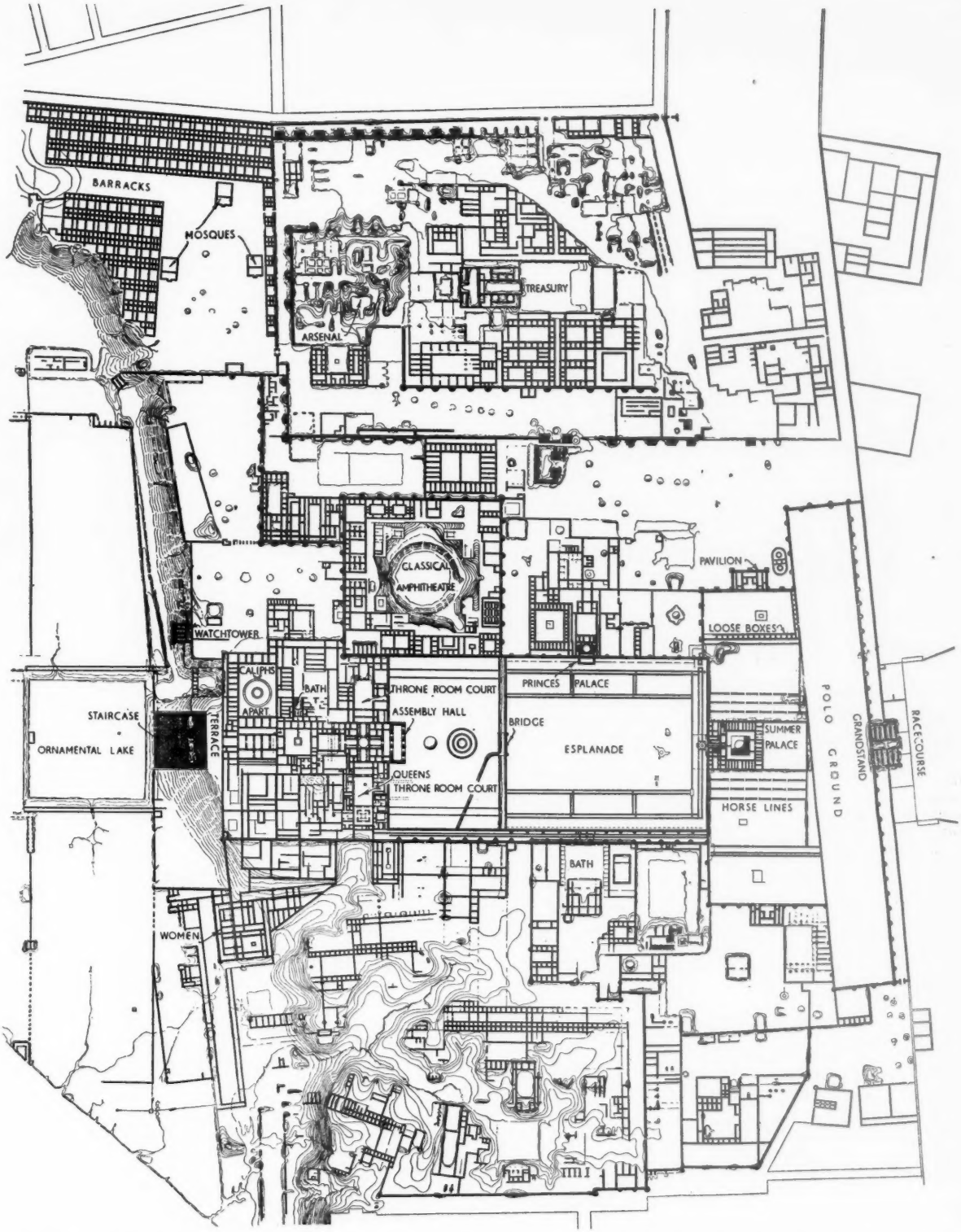
IN THE YEAR 836 A.D. the Caliph Al Mu'tasim transferred the 'Abbasid capital from Baghdad to a place called Surra-man-raa, on the left bank of the Tigris about seventy miles further north. In this way one of the most extraordinary cities of the ancient world came to be built.

Like the mushroom capital of the Pharaoh, Akhenaten at Tell-el-Amarnah in Egypt, and Sargon II's abortive attempt to found a new capital of Assyria at Khorsabad, Sâmarra, as the Arab city came to be called, was built, occupied and finally abandoned, all within the space of a little over fifty years. Its ruins are today for the most part undisturbed by later occupation, and the plans of the buildings can be traced almost without excavation. From the air one sees a finely conceived town-plan, whose palaces, mosques and wide boulevards stretch for over twenty miles along the river bank, and it is difficult to believe that one is looking at a dead city, uninhabited for over thirteen hundred years.

The great palace built by Al Mu'tasim himself, and called by the Arabs Dar al 'Amma, remained to the end the focal point of the whole town. It was tentatively planned by a French architect, called Viollet in 1911, and a few years later, more effectively excavated by the indefatigable Sarre and Herzfeld. It is partly due to the long delay in the publication of Herzfeld's work (the volume dealing with the architecture of the palace is still in the press) that this magnificent building has never until now occupied its correct place in histories of architecture and monumental planning. So, when his own publication of the plan was recently anticipated by Creswell in another work, a definitive attempt was made in Baghdad to reconstruct the building in the form of a scale model. It is this model, made in the Iraq Museum Laboratory, under the supervision of Mr. Akram Shukri, which forms the subject of the present article and photographs.

The palace, which occupies an area of 432 acres within its main enclosure-wall, stands on a cliff overlooking the Tigris valley. The land between the cliff-foot and the river is rich alluvial soil, and was at that time laid out with flower-gardens and orchards. So the prospect from above must have been an extremely pleasant one. A glance at the plan will show that the main elements of the building are arranged on a single gigantic axis. Starting at the east end, with the double 'grandstand', which commands a view on the one side of the pear-shaped racecourse, and on the other of the polo-ground, it passes in turn through the subterranean 'Summer-Palace,' the vast rectangular 'Esplanade,' the eastern 'Assembly Hall' and all the nuclear units of the main building in turn, to the great central archway of the triple portico on the west side. An immense vista is thus created, terminating ultimately in the silhouette of another palace, known as Qasr-al-'Ashiq, high upon the escarpment beyond the Tigris.

The main approach was from a road which skirted the foot of the cliff on the west side. Here there was an ornamental lake, and from it a wide stairway led up to a terrace, running the whole length of the main façade, upon which one can imagine the Caliph himself walking in the cool of the evening. The great central archway of the triple entrance still stands today. Beyond it one passed through a succession of five transverse halls, which Herzfeld imagined to have had timber roofs, but we, in view of the eight-metre span, have restored with barrel-vaults, more in keeping with contemporary building principles. These cham-



Herzfeld's plan of the palace at Sâmarra. (Reproduced from K. A. C. Creswell, *Early Muslim Architecture*, Part II, Fig. 194, by permission of the author and of the Oxford University Press)

Southern view of the amphitheatre and 'treasury'. Three small mosques may be distinguished in the barracks enclosure beyond

bers, through which the public was presumably permitted to circulate, gave somewhat surprisingly free access on the north side to the unit which, in fact, comprises the Caliph's private apartments. It may be said in passing that this little precinct, in the process of reconstruction, seemed spontaneously to acquire a character of its own, as though confirming our interpretation of its scanty remains, and is in many ways one of the most attractive features of the model. The excavators had found a wide, circular pool with a small platform in the centre, and a curb which might have encircled the roots of a large tree. It remained only to supply this tree, and a domed *baldachin* standing on four pillars in the centre of the lake, in order to complete the already dignified impression of the colonnaded enclosure.

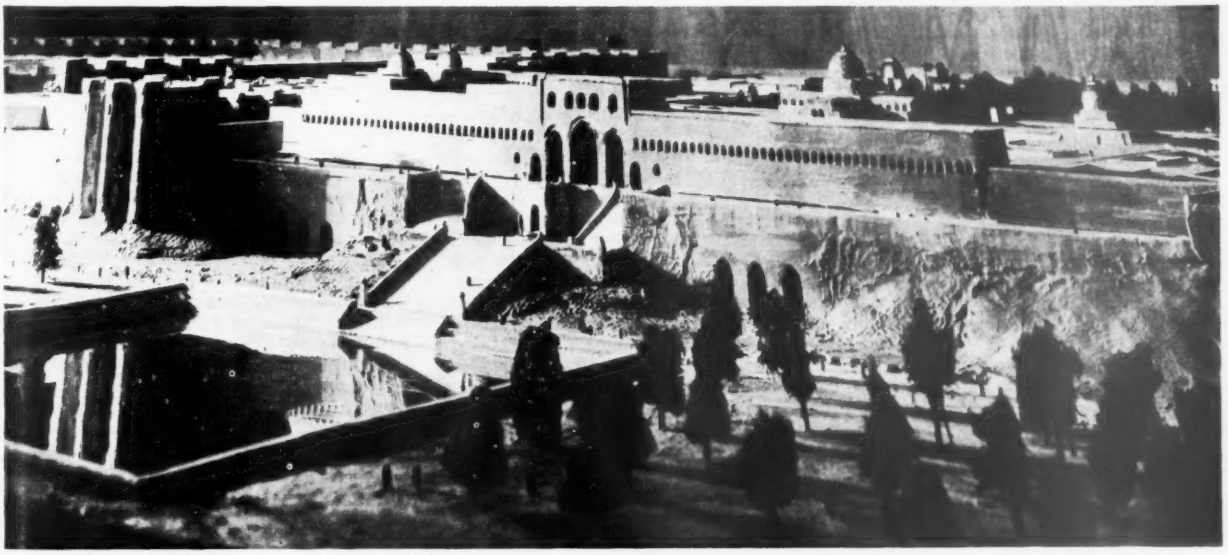
Returning to the axial units, a sixth and somewhat similar antechamber led to a square court, again with a fountain in the middle, connected by a water-duct on the cross-axis with a large bath compartment in the Caliph's residential quarters to the north. Beyond again was a somewhat smaller 'Court-of-Honour,' beneath which an underground passage permitted the Caliph, without appearing in public, to pass from his own apartments to the women's quarters, comprising the southern half of the building. Next came a triple archway—probably a miniature of the main entrance—marking the approach to the main 'crossing' and the 'Throne-room' complex. The cruciform element beyond, marks the focal point of the whole plan. In the centre is a square compartment, referred to by Herzfeld as 'almost certainly covered by a dome', while the arms of the cross consist of four basilica-like halls, with columns and side-aisles. These latter should logically be reconstructed with clerestory lighting, and have been treated in this way in the model.

Our domed compartment, then, marks the point where the centre-line of the building is traversed by an important cross-axis. Turning northwards, successive antechambers lead to the throne-room court, and beyond to the great *iwan* where the Caliph would no doubt take his place on state occasions. This section of the building was, for some reason, never excavated, but its plan is comprehensible from the ruins above ground. Balancing the throne-room court on the south side of the building was another of the same size, surrounded by State apartments, evidently used by the Queen and her entourage. Beyond again, was a large, square chamber, enclosed by a wide corridor. In the centre of this chamber was a great ornamental water-basin of Egyptian granite, which still survives, and to the west, a single basilica-hall led to the innumerable courtyards of the *Harim*.

The cruciform unit on the main axis should logically bring one to the limit of the building on this side. Yet, after passing through the basilica-hall forming the eastern arm of the cross, the visitor would find himself still separated from the Esplanade by an extraordinary architectural feature. This gigantic portico or 'Assembly Hall,' projecting beyond the façade of the main building, seems hardly to constitute a coherent adjunct to the plan, and was in fact not improbably an afterthought. In the model, it has been given five squat, arched openings, in keeping with the great thickness of the walls, while the space between it and the basilica façade has been left open.

Little need be said of the Esplanade itself. Its main features are an ornamental bridge over a canal in the centre, a domed building on the north side, which is generally assumed to have been the residence of one of the princes, and the entrance to the 'Summer Palace' on the main axis, whose porch was perhaps accentuated by a

View of the great esplanade and main axial buildings from the south-east, showing the amphitheatre and barracks beyond. The swimming-bath in the foreground belongs to the women's quarters



The Bab al-'Amma and western façades of the palace, with the watch tower reflected in the lake

square tower. The Summer Palace itself has a sunken courtyard with a circular pool, and chambers around it carved out of the conglomerate on which the city is built.

The remainder of the space between the Esplanade and polo-ground is occupied by horse-lines and stables. Both on the north and south sides are paddocks, overlooked by formal pavilions with wide porticoes, from which the Caliph could watch the horses paraded. The northern paddock is surrounded by loose boxes. The grandstand, between the three-mile-long racecourse and the polo ground, explains itself.

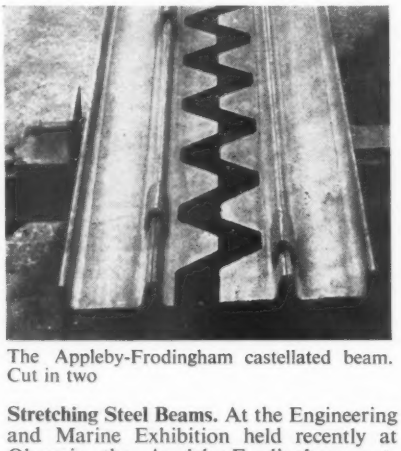
Of the many and varied buildings annexed to the palace on the south side, few have been excavated and none can be reliably identified, with the exception of a swimming pool, contingent to the double enclosure wall of the Esplanade, which appears as such in the model. To the north, however, there are several magnificent and obviously important edifices. One of these, again contingent to the Esplanade, is the square complex, surrounded by a powerful enclosure-wall with semi-circular towers which Viollet identified as a classical amphitheatre, with a double-domed structure enclosing a stage on the north side. North of the amphitheatre is the most heavily fortified unit of the whole group, identified, this time, by Herzfeld, as the 'Treasury.' This is a building considerably larger than the nuclear complex of the palace itself, surrounded by a powerful enclosure wall whose outer faces are strengthened with square towers nearly ten metres wide. The smaller annexe on the west side Herzfeld called the 'Arsenal.' By contrast with these buildings, the 'barracks' further to the west are unmistakable, while the three small buildings in the barracks courtyard are obviously miniature mosques.

The scale of the model, which is one centimetre to four metres, was, as can be seen, too small to require the reconstruction of much architectural detail. Nevertheless, the elevation of the principal façades and the contrivance of an appropriate roofing system, as well as the interpretation from the plan alone of the meaning and function of the actual buildings, presented some very interesting problems. Some elements were adopted from the contemporary Mosque at Cairo of Ibn Tulun, who had himself lived at Sâmarra. The remainder were based upon Creswell's admirable study of the building, and upon our own observations.

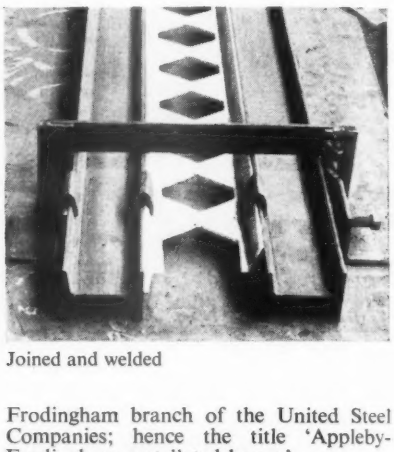
Finally, it is perhaps no exaggerated claim that the contrivance of this model has contributed something towards the resurrection of the little-known architecture of the 'Abbasid period; and it is particularly interesting to note how, even in miniature, this palace seems to perpetuate the age-old building tradition of Mesopotamia. Though the Arabs were comparatively recent arrivals, the materials and style which they here adopted were those of the country, sanctioned by endless generations of builders, and now revitalized by a new conception of magnificence. *The photographs are Iraq Museum copyright and are reproduced by permission of the Director-General of Antiquities.*

Review of Construction and Materials

This section gives technical and general information. The following bodies deal with specialized branches of research and will willingly answer inquiries.
The Director, The Building Research Station, Garston, near Watford, Herts. Telephone: Garston 2246.
The Director, The Forest Products Research Laboratory, Princes Risborough, Bucks. Telephone: Princes Risborough 101.
The Director, The British Standards Institution, 28 Victoria Street, Westminster, S.W.1. Telephone: Abbey 3333.
The Director, The Building Centre, 9 Conduit Street, W.1. Telephone: Mayfair 8641-46.



The Appleby-Frodingham castellated beam. Cut in two



Joined and welded

Stretching Steel Beams. At the Engineering and Marine Exhibition held recently at Olympia the Appleby-Frodingham patented castellated beam system was exhibited. It is a method of increasing the effective strength of a steel section without increasing its weight, and this is done without waste and at an economic cost.

Any standard British rolled section can be taken, and laid on the cutting table; it is then divided into two by flame-cutting to a mathematically calculated saw-tooth profile with blunt points. One half is then turned over, end for end, and placed so that the blunt points of the saw-tooth profile meet, when they are welded together. While being cut and welded the section is clipped to similar sections on each side, to avoid any possible distortion. The patentees quote, as an example, a 12 in. by 5 in. by 30 lb. joist, which in its original state would be suitable, roughly, for a 20 ft. span, but when 'stretched' into a castellated beam it becomes about 18 in. by 5 in. by 30 lb. and would be good enough for a 30 ft. span.

The system can, of course, be used in making stanchions for light structures; indeed, the main advantages of the system are to be found in the case of light loads on long spans, where stiffness is the determining factor and not the extreme fibre stress or the shear. The system can also be applied to channels, plates and other sections, and should prove useful in ship building.

These castellated beams were originally known as Boyd beams, after the name of the originator, but the patent rights have now been taken over by the Appleby-Frodingham branch of the United Steel Companies; hence the title 'Appleby-Frodingham castellated beams'.

The Appleby-Frodingham Construction Department are developing the method and will undertake fabrication to customers' requirements; alternatively, licences to manufacture steelwork incorporating castellated constructional systems are issued to structural steel fabricators of repute in Great Britain, and entitle the licensee to manufacture to his own designs or those of his customers. Recognized consulting engineers and architects are at liberty to incorporate this method of construction in their designs, provided that the patent is acknowledged on the plans and formal permission is obtained, but the fabricator concerned must take out the appropriate licence for manufacture.

Inquiries should be addressed to the Appleby-Frodingham Steel Company, Scunthorpe, Lincolnshire.

I.E.S. Code. The Illuminating Engineering Society have published their 1949 code for the lighting of building interiors. The introduction states that the code 'is a set of rules and recommendations for good interior lighting, and is primarily for the reference of those professionally concerned in lighting practice. Detailed knowledge, experience and skill will usually be required for the practical design of lighting correctly based on the rules laid down. The code is also intended to guide the user in stating his lighting requirements.'

The meaning and use of the daylight factor are explained, and a summary of recommendations is given, and two col-

oured illumination charts, one for natural and the other for artificial lighting, show by different-sized printing on a green graded background the effect of contrast and the degree of illumination required for comfortable viewing, according to the size of the object.

A schedule is given of recommended values of illumination on objects of special regard in various interiors or occupations, and the booklet ends with a list of appropriate British Standards on illumination and lighting fittings.

Copies of the code may be obtained, price 2*s*. 6*d*., from the Illuminating Engineering Society, 32 Victoria Street, London, S.W.1.

The **Luma-block.** This is a hollow block made from translucent thermoplastic material. The blocks are made in two sizes; each is $7\frac{13}{16}$ in. square on face, but one type is $1\frac{11}{16}$ in. deep and the other $3\frac{7}{8}$ in. The weight of the thinner block is just under 1 lb., and the thicker one is just under $1\frac{1}{4}$ lb. The blocks have staggered interlocking fins on all sides, so that they can be made up into a panel without the aid of strips, mortar, or adhesives, though stiffeners can be used if thought desirable. The light transmission is nearly the same as glass, depending on the colour, for the blocks can be had in crystal, pink, light blue, or amber.

It is recommended that the blocks should not be used for external purposes, except temporarily, nor should they be used for weight carrying or in positions where they would be exposed to temperatures continuously exceeding 140 degrees F. It is recommended that panels should not exceed 8 ft. high and 15 ft. wide unless an overlapping trim member is used.

On the front and back faces the blocks have a reeded margin, the remainder of each face being formed into small squares of pyramidal shape on the inside, so that light is diffused.

The blocks are an American patent, and are manufactured over here under licence. Inquiries should be addressed to British Moulded Plastics, Ltd., 37 Portman Square, London, W.1.

T. and C.P. Maps. Maps prepared by the Ministry of Town and Country Planning and published by the Ordnance Survey, may usefully be studied in conjunction with the recent findings of the Royal Commission on Population, for they show the changes that have taken place in Great Britain during the two periods 1921-31 and 1931-39. Increases and decreases in the population of various parts of the country are shown by colours.

Decreases have occurred in certain rural areas, for instance in North Devon and most of mid-Wales, and also in the central parts of London, Birmingham and Manchester, but increases are noted in the outskirts of those cities as well as on the south coast of England.

The maps are to a scale of approximately 10 miles to the inch, and two sheets cover the whole of Great Britain. They are priced at 5*s*. each sheet.

Clix Demonstration Van. Acting on the principle that to some people seeing is better than reading, the General Accessories Co. Ltd. have introduced a 'mobile demonstration unit' for the display of Clix electrical accessories. It is a nice-finished motor van with hinged sides, which can be opened to show the display stands inside. Various accessories are mounted on the stands, demonstrating the method of construction and ease of installation. A 16 mm. film strip projector is installed to show technical developments. The company will welcome inquiries for the unit to be shown to technical schools and at exhibitions and displays. No charge will be made for this service, and the unit will be accompanied by a demonstrator.

A neat accessory shown was the Surrey switch, where the actuating bar moved up and down within the rounded body of the casing, doing away with the usual projecting knob. Inquiries about the unit should be sent to the company at Barton Hill Works, Bristol, 5.

Recent Codes of Practice. C.P. 111 (1948) General series; structural recommendations for loadbearing walls. This code includes sub-codes 111.101 masonry, including brickwork (unreinforced); 111.102 masonry, including brickwork (reinforced); and 111.201 concrete cast in-situ. The code is divided into the usual sections, general, materials appliances and components, design considerations, work off and on site, maintenance, and appendices.

In recent years two methods have been used for determining the necessary thickness of walls: (*a*) by relation to the height and length, (*b*) by relation to the load to be carried, in conjunction with certain specified permissible stresses, but this code deals only with the design of walls based on the last method.

A table gives the maximum permissible uniformly distributed compressive stresses (at and after the stated times) on masonry members with slenderness ratio of unity, according to the mortar mix; another table gives the maximum permissible uniformly distributed stresses on plain concrete walls generally with slenderness ratio of unity, using various mixes; and a third gives similar information where structural grade concrete is used.

The code can be obtained from the British Standards Institution, 24/28 Victoria Street, London, S.W.1, price 5*s*. post free.

There is the usual warning that during the present abnormal conditions it may not be practicable to take full advantage of all the recommendations.

Code of Practice C.P.324.201 (1948), installation of domestic electric space-heating equipment. This code deals with the selection and location of independent electrical space-heating appliances for individual rooms of dwellings and of premises of a similar character, either as the only source of heating or in conjunction with other forms of space-heating, but it does not apply to complete central-heating systems. Contents: general; materials, appliances and components; design considerations; work off and on site; inspection and testing; maintenance; appendices giving method of calculating required heat and rating of heaters. To be obtained from the British Standards Institution, 24/28 Victoria Street, London, S.W.1, price 2*s*. post free.

Recent British Standards. B.S.565 : 1949. Glossary of terms applicable to timber, plywood and joinery. There is a revision of B.S. 565 : 1938. Contents: foreword; section 1, characteristics and explanatory terms; section 2, seasoning; section 3, defects, (*a*) natural and miscellaneous, (*b*) due mainly to fungi, (*c*) due to insects and marine borers, (*d*) due mainly to seasoning, (*e*) due to manufacturing; section 4, sizes and quantities; section 5, plywood and coreboard terms; section 6, joinery terms; appendix of some abbreviations commonly used in the timber trade; index. Price 5*s*. net, post free from British Standards Institution, 24/28 Victoria Street, London, S.W.1.

B.S. 1431 : 1948. Wrought copper and wrought zinc rainwater goods. Contents: foreword; specification clauses, part 1, general requirements, part 2, specific requirements: table 1, dimensions of gutters; table 2, fittings for rainwater pipes. Appendix, recommended methods of fixing and jointing. Illustrated. Price 2*s*. 6*d*. net, post free.

B.S. 1563 : 1949. Cast iron sectional tanks (rectangular). Contents: foreword; section 1, provisions applicable to all tanks, scope, working temperatures, materials, strength of plates, and so on; section 2, provisions applicable to tanks made from unit plates 2 ft. square, light plate type; section 3, provisions applicable to tanks made from unit plates 3 ft. square, heavy plate type; section 4, provisions applicable to tanks made from unit plates 4 ft. square, heavy plate type. Tables of sizes and scantlings. Price 5*s*. net, post free.

B.S. 1564 : 1949. Pressed steel sectional tanks (rectangular). Contents: foreword; scope; working temperatures; materials; dimensions and thicknesses of plates; permissible stresses; connections and their welding; table of sizes, approximate weights and nominal capacities. Price 3*s*. net, post free.

B.S. 1567 : 1949. Wood door frames and linings. Contents: specification, definitions, timber, types, sections, construction, tolerances, adhesives, general, priming; illustrations and details of inward and outward opening external doors, and of linings and frames for internal doors. Price 3*s*. net, post free.

B.S. Addendum No. 2 to Handbook No. 3: 1947. This Addendum contains summaries of a further 25 new B.Ss. regarding building materials and components for housing, and of 18 revisions of B.Ss. which appeared in the original Handbook. This Addendum No. 2 supersedes Addendum No. 1, and is priced 5*s*. post free, its reference number being P.D. 905.

Village Hall for St. Olave's, Suffolk

Architects: Tayler & Green [*F/F*]

THIS VILLAGE HALL is of pleasantly informal design, avoiding both the rigid pretentiousness and the hutment appearance so often seen in this type of building. The site, of one and a half acres, is irregular in shape and has some fine existing beech trees and an oak. New trees to be planted include false acacia, wild cherry and Scots pine.

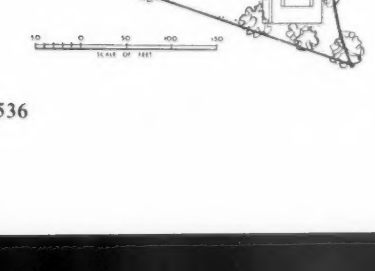
The building is to be executed in two parts, the second part consisting of a proper stage block wider and higher than the proscenium; the future proscenium opening is provided in the end wall and is to be temporarily closed. There is a single large window on the south side; smaller windows on the north side provide cross ventilation and are placed high enough for exhibition material to be fixed beneath them. As at present planned, the hall seats 216, nesting steel chairs being used.

Very rigid economy in cost has controlled the whole design and construction. The main walls are colour-washed cavity brickwork except the two end walls, which are covered with cedar shingles. Shingles cover the temporary framing filling the proscenium opening in which scenery doors are provided.

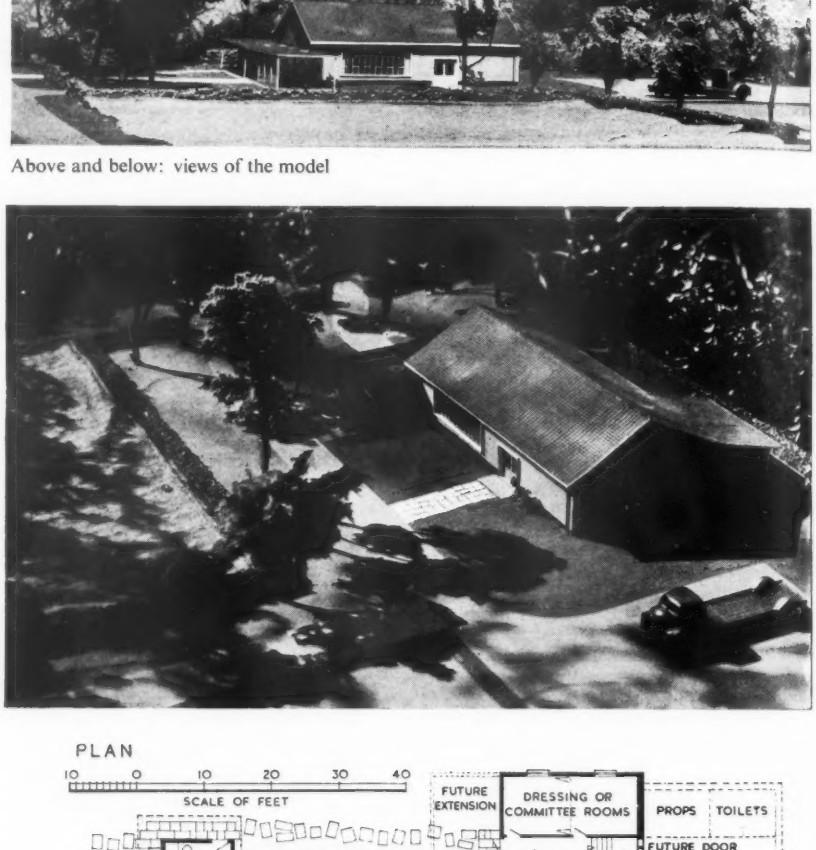
The main roof of the hall is formed of trussed rafters covered externally with pantiles and giving a sloping ceiling inside of lower pitch. The flat roof is covered with 3-ply bituminous felt.

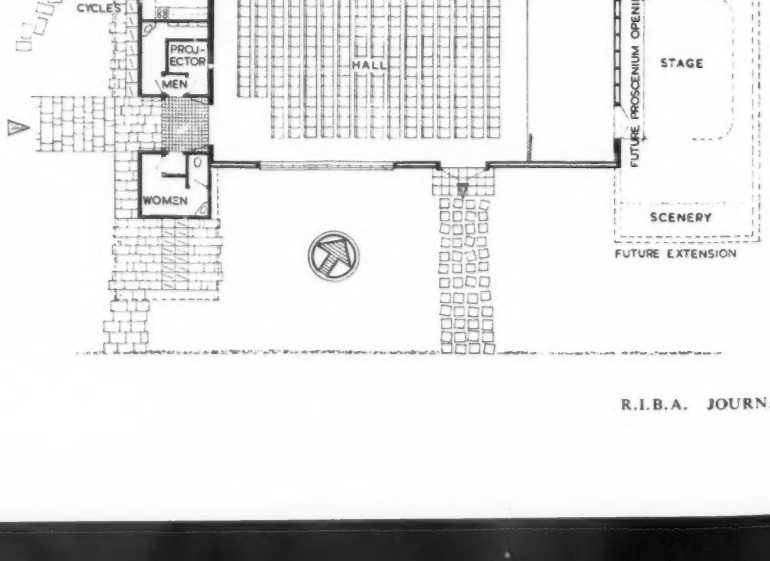
Standard metal windows are used throughout, including the large south window. The hall floor is of wood blocks and that in the entrance block of quarry tiles. Heating is by electric tubes thermostatically controlled.

The brick walls will be colour-washed lemon yellow with grey cedar shingles on the end walls, and grey pantiles. Paintwork generally is white with entrance doors light blue.



Above and below: views of the model





The Architect and the Building Industry

By Sir Lancelot Keay, K.B.E., Past President, R.I.B.A.

A paper read at the Tunbridge Wells Building Week on 19 September

There is today a very real desire for the closer co-operation of art and industry, but, when moving in the circles of those associated with the Building Industry, one is conscious that misconceptions of the function of the architect exist and of attempts to saddle him with some of the responsibility for low production. Criticism is also voiced of his apparent reluctance to depart from existing practice and of failure to make the fullest use of all that science has to offer to the industry.

Caution must of necessity be one of the many attributes of the architect. The buildings he designs must, in the interest of his client, and for the safety of the general public, conform to certain established codes of practice. Architecture must of necessity be a conservative Art. I have referred to misconceptions as to the functions of the architect. What is expected of him? With some the idea prevails that he is simply called in to express by drawings and specifications the wishes of his client, to watch the progress of the work, holding the scales impartially between client and builder until the task is completed satisfactorily and the final reckoning agreed upon. But so narrow a definition of the architect's responsibilities reflects but a limited appreciation of his ability and versatility. Let us look back for a moment before considering whether any radical change of function would be to the advantage of the industry as a whole. Vitruvius in his book on architecture says of the architect: 'Let him be educated, skillful with the pencil, instructed in geometry, know much of history, have followed the philosophers with attention, understand music, have some knowledge of medicine, know the opinions of jurists and be acquainted with astronomy and the theory of the heavens.' This may be a free translation but it gives a very clear idea of the Vitruvian conception of the qualifications of an architect.

Those of us who are architects may be considering how far short of this standard we fall or if any have ever attained it. Possibly the best known name of an architect so nearly equipped, which comes quickly to mind, is that of Wren. At the age of 24 he was appointed Gresham Professor of Astronomy and his name appears in the Charter of the Royal Society as 'Christopher Wren, Doctor in Medicine and Saville Professor of Astronomy.' It has been said of Wren that 'there was scarce ever met in one man so great a perfection, such a mechanical hand and so philosophical a mind.' So varied were his achievements that doubts have been cast upon the adequacy of his training as an architect.

Despite the high standard suggested by Vitruvius not all the architects of his day were paragons of perfection. He had caustic comments to make on the subject of extras and complained that 'many people were led into limitless expenditure and some were compelled to stop building, broken in fortune and in spirit.' Vitruvius commends a law, stated to have been operated in Ephesus, under which if an architect's extras exceeded the contract by more than 25 per cent he was liable to pay for these personally. I do not propose to discuss the question as to when the architect became an independent directing authority in association with, rather than a constituent member of the Building Industry, but I would suggest that for 'architects' extras' we might also read 'builders' extras' and assume that the penalty was imposed on those responsible for the excessive extras which were not the result of the vacillations of the client. It is also interesting to note that 'touting' for work was discountenanced by Vitruvius for he intimated that 'it is only proper for an architect to undertake a charge on being asked to do so.'

If we search for a definition of the art of architecture we learn from Sir Gilbert Scott that 'architecture as distinguished from mere building is the decoration of construction.' Ruskin tells us that 'architecture is the art which so disposes and adorns the edifices raised by man that the sight of them contributes to his mental health power and pleasure.' He also said, however, that 'no person who is not a great sculptor or painter can be an architect. If he is not a sculptor or a painter he can only be a builder.' Though this supplies us with a very clear definition of the difference between an architect and a builder it is not one which is likely to meet with general approval.

There are some who, accepting the first definition I have just quoted, would restrict the function of the architect to that of designing the internal and external clothing of buildings, leaving constructional details to the engineer and the assembly of the component parts to constructional experts. In support of this it is argued that the architect cannot possess a sufficiently intimate knowledge of all the crafts in the industry to warrant his control and direction of them. Such a change would be a departure from early and present practice and there is no reason to suppose that the head of a building firm is better informed in the intricacies of the crafts than the architect.

If there are problems facing the Building Industry, or deficiencies in its organization, they will be best resolved by the one remedy likely to remove the difficulties in all walks of life today, that is by the free discussion of these problems and the determination of all interested in their solution to co-operate to the fullest extent. Looking back over the last half century I wonder whether the co-operative spirit, so necessary for the success of any industry, has strengthened or weakened. As a youth I learned much from the problems I heard discussed amongst craftsmen on the building sites. Today this keen interest in craftsmanship seems to be crowded out by other interests, and the opportunities of acquiring knowledge in craftsmanship are reduced.

Realizing that the present position is not satisfactory it is necessary to accept or find an answer to proposals put forward by those who seek to remedy it. For instance it is sometimes suggested that we should return to the conditions obtaining when architect, builder and master craftsman were one and the same person. Many examples are known from the middle ages onwards in which the architect acted as the builder and undertook the contract for the design, supervision and erection of a building. This practice, in fact, obtains today in those instances in which buildings designed by official architects are erected by direct labour under their control and direction. I can speak of the benefits which accrue to those who have been fortunate to have this experience, though I am aware of the criticism which the practice invokes. I have seen it stated that an architect who accepts an official appointment loses his art and I have noticed a reluctance on the part of the industry to accept any claim for the success—financial or otherwise—of any scheme of the architect-cum-builder.

But the contention of many today is, not that the architect should revert to this earlier practice of leadership but, that he should become a member of a team operating under the control of the builder or master craftsman. There is a tendency in the industry today for control to pass into the hands of those whose interest is mainly financial. They have little, if any, knowledge of any of the crafts and no conception of the place of the creative artist. From these strong support may be forthcoming for a change in the organization of the industry which would place them in control. This would lead to a negation of the functions of the architect and would operate against the best interests of the industry.

Such a system would be open to the same objection as that of speculative building. We may safely assume that any attempt to revive the architect-cum-builder would be as strenuously opposed by the building side of the industry as any attempt to place the architect in a position subservient to a purely financial head of a contracting firm would be by the profession.

In expressing the opinion that no change in present methods is necessary and that the general control and supervision of building operations must, in the interest of the building owner, remain in the hands of the architect, I am at least supporting a very long established practice. If it is to remain I realize that the industry has the right to ask that those who accept the responsibility for this control and supervision must be competent to discharge the important duties involved. Up to the beginning of the century young men entered the architectural profession by pupilage or apprenticeship. The system was that under which many of those who have given us our finest buildings were trained. It was a system, however, under which a pupil could become merely the copyist of his master, thereby suffering from some limitation in the evolution of his own powers of design. Throughout his training he had many opportunities of visiting work in progress and of seeing for himself how craftsmen solved their difficulties. The practical experience gained in this way gave him confidence when he was called upon to design for himself.

But towards the end of the last century the number of practising architects increased rapidly to cope with the great building activity of the latter part of the Victorian period. Speed, so often the enemy of sound progress, undermined the thoroughness of architectural training. It was for this reason that a change in the method of training became necessary and architectural schools were founded in London and in certain provincial cities. Today most of the architects of the future are being trained, not in the offices of practising architects, but in the less restrictive and more catholic environment of schools of architecture. Here the field of opportunity widens. Relevant subjects are discussed and taught with thoroughness and there is greater scope for individual expression. If there is a criticism of this method of acquiring knowledge of the Art it is that it may tend to become too academic, there being less opportunity of constant contact with actual building operations, which is so valuable a feature of the training of a pupil who is able to follow the physical interpretation of his master's designs into brick, stone or steel.

Great responsibility rests with those called upon to advise on the best method of training. I am expressing a purely personal opinion when I say I doubt whether we have yet found the final or best solution of this important and difficult problem. It is of the utmost importance that we should do so if we are to continue to occupy our present place in the building industry.

I have referred to Ruskin's dictum that 'no one who is not a great sculptor or painter can be an architect,' but I do not subscribe to it. Today it is far more essential that in addition to being competent to practise his art backed with a sound knowledge of construction, the architect should possess powers of organization and supervision and a keen appreciation of all aspects of finance. Present conditions demand that he is something more than a creative artist or that he should face the busy business world in company with and having the fullest assistance of a partner capable of dealing with the more mundane matters.

I have already referred to the need for closer co-operation. I shall refer to it again. It is essential in all stages of our great building undertakings, though it may be delayed if competition is the method of selecting a contractor. I know from experience how much time can be saved, how much more smoothly a project can be carried through, if early discussions take place between architect, contractor, sub-contractors and foremen, and some form of time and progress schedule is agreed before work actually commences. With a programme to work to and an assurance of adequate supplies of materials and the proper timing for the delivery of components one of the factors contributing to low production would be eliminated.

It is our responsibility as architects to see that those who practise our art are sufficiently equipped to retain our status as the designers of our buildings and the supervisors of their erection. I should like to feel that the benefits of experience obtained in building operations are made widely known. I betray no secrets when I say that most of us at some time have referred to books of building construction and typical specifications. Both may have been a little out of date and we might have been better informed had we been in possession of a 'Builders Digest' compiled from the fruits of practical experience of builder and operative.

Let me try to answer certain criticisms I have already referred to. As architects we are often blamed for the present low output, on the grounds of our failure to keep pace with the demands of the builder. As soon as a decision to build is taken operations are expected to commence at once. I suggest that architects and builders alike do a disservice to the industry by encouraging their clients, whoever they may be, to believe that this is possible, or that it makes for any saving in time in the long run. It results in living from hand to mouth with consequent low production and in such cases it is unfair that either architect or builder should be held responsible. I have no defence for the dilatory or the incompetent. The world has no use for such today and has its own way of dealing with them. I only ask that all who complain of delay in others should make quite certain that the responsibility does not rest with themselves.

I also referred to the criticism that architects are reluctant to embark on new methods of construction or to apply to the fullest extent the results of scientific research. It is not every architect's lot to serve wealthy and adventurous clients, willing to take some risk and stimulated by novelty. It is, I think, unfair to suggest that there is any general reluctance to make use of the results of scientific research, for after all there are adventurous architects as well as clients. Many of the results of research can be put into immediate use, but for some the test of time must be applied. The architect has a duty to study the interests of his clients and it is understandable that he should show caution in recommending new methods or new materials, in the use of which neither he or his confrères have had any practical experience. I should like to take this opportunity of saying how indebted I am personally to the Building Research Station for their help and co-operation and I am confident that my expression of thanks will be echoed by many in this hall today. I should like to think that the Research Station Digests were read by every architect and craftsman, however young or old they may be. It is never too soon or too late to learn.

You may have expected me to make reference to some of the problems receiving the consideration of the industry today, in which we architects are directly or indirectly concerned, such as: the increasing tendency towards specialization and the employment of specialist sub-contractors, the greater use of mechanical appliances, output, the effect and desirability of bonus payments, the elimination of competition and all that implies. Because I hold no brief to speak for the main body of architects, and because of my association with the Building Industry Working Party, I have felt it better to refrain from discussing these matters, not all of which are free from political implications.

Looking at the industry today I would suggest that its greatest need is for a more evident demand for co-operation amongst all the interests included in it and for the elimination of an apparently growing tendency of suspicion amongst the members of it. We are faced with an insistent demand for higher standards, for greater efficiency and speed in output. But there are fewer opportunities for training those who will follow us, we hope, in the days when controls are removed and a greater freedom of action will be possible. The field of work upon which the industry is engaged is a very limited one and the few opportunities it offers for variety are often curtailed by increasing standardization.

As you move about the country you find evidence of the great achievements of the industry in which architect, master craftsman and workman have given of their best. This happy trinity of interest must be encouraged afresh. We are moving so fast in the hurly-burly of today that individualism is being stifled and we face a totalitarianism in architecture which is influenced by materialism. It is our duty as architects, constituent members of this industry, to draw attention to the spiritual value of our Art, well practised and to preach the need for beauty and to tell of the joy that may be given to many when beauty is attained. This beauty can be attained in buildings, not by any excess of individualism, but by the quiet dignity which comes from designing in truth and in perfect proportion. Few vocations in life can excite greater satisfaction than that of those who are called upon to play a prominent part in the designing of buildings of great perfection. I speak for all architects when I express our willingness to meet and discuss how best the progress of the Building Industry may be ensured.

Salary Scales for Architects in Local Government

MANY MEMBERS may have already learnt about the recent decisions of the National Joint Council for Local Authorities' Administrative, Professional, Technical and Clerical Services, which, for the first time since the introduction of the National Scales in April 1946, lay down certain standards for the application of some of the Grades to architects and architectural assistants in municipal service. These standards, set out below, became operative on the first of October.

The Administrative, Professional and Technical Division of the Scales consisted of nine Grades, covering a range from £390, the minimum of the lowest, to £760 a year, the maximum of the highest. This structure remained unchanged until the end of April 1948 when two Grades were added, bringing the maximum of the highest to £1,000 a year. (For the London area there is a weighting of £10, £20 or £30, according to the age of the officer.)

Since no standards had been laid down by the National Joint Council, each local authority fixed its own in applying the Grades to architects and assistants in its employment, sometimes influenced by those obtaining in the municipalities of comparable size in its area, sometimes in relation to its other officers, and sometimes, it would appear, quite arbitrarily. This double absence of uniformity and standards produced the expected result of architects and assistants similarly qualified and experienced, discharging similar duties, and carrying out similar work, earning widely different salaries. No doubt this state of affairs accounts in part for the constant depletions in and changes of architectural staffs in some local authorities.

As far back as December 1946 the Royal Institute submitted to the National Joint Council a Memorandum, setting out its objections to the unsatisfactory manner in which the Scales were being applied to architects, and proposing certain standards for their future administration. This was followed by informal talks between representatives of the National Joint Council, N.A.L.G.O. and the R.I.B.A. on the most practical and expeditious approach which the Institute could follow to the National Joint Council for the purpose of making representations about conditions of service of its members. It was agreed, *inter alia*, that the Institute should submit an amended memorandum, but containing the same proposals as the original one, and that R.I.B.A. representatives would present and advance its recommendations, before the Committee of the National Joint Council which in due course would be appointed to consider the application of the Scales to certain classes of 'Specialists'.

The amended memorandum was submitted in November 1947; but for divers reasons it was not until June of this year that the R.I.B.A. was notified that the Special Classes Grading Sub-Committee would be meeting three weeks ahead to consider the R.I.B.A. memorandum and hear its representatives.

The two new Grades, coupled with the rise of 9 points in the cost-of-living index since 1947, made imperative a revision of the original R.I.B.A. recommendations. Accordingly, the Salaried and Official Architects' Committee drew up a fresh memorandum, adjusting to current conditions their former proposals on the application of the Scales. This was approved by the R.I.B.A. Council, and at the end of last June was presented and reasoned by representatives of the Institute to the Special Classes Grading Sub-Committee sitting under the chairmanship of Sir Horace Wilson.

The R.I.B.A. had recommended and defined the different standards that should be used for the application for each of the eleven Grades. At the meeting of the Grading Sub-Committee agreement in principle was reached on the application of Grades I to V, but the representatives of the National Joint Council did not accept the standards which were proposed for Grades VI to X. Briefly, these were based on the number of professional and technical assistants which an architect was personally called upon to control and supervise. The Sub-Committee were not satisfied that the criterion suggested was workable, and since they recognized that they were unable to devise one more serviceable, they decided not to lay down any standards for these higher Grades, but to leave them to the judgment of the employing authorities, subject to the indication given in (6) below.

The Institute's representatives exercised their persuasive power to the utmost in urging the recognition of their recommended standards for the omitted Grades, and it has to be admitted that their exclusion has caused deep disappointment.

Following on the meeting of the Grading Sub-Committee, when as has been said, some agreement in principle was reached, representatives of the two bodies held several consultations on the drafting and details of the conclusions, finally producing the following provisions which in turn were approved by the National Joint Council to be effective as from 1 October 1949.

ARCHITECTURAL ASSISTANTS

1. Probationers of R.I.B.A., articled pupils, learners, beginners, trainees. General Division (on an age scale basis).
2. Assistants who have attended a full-time course of Architecture and have passed the R.I.B.A. Intermediate Examination, or its equivalent at one of the recognized Schools of Architecture, but who have had less than one year's subsequent experience in an architectural office. . . . A.P.T., Grade II (£420-£465).
3. (*a*) Assistants who have attended a full-time course of Architecture and having passed the R.I.B.A. Intermediate Examination, or its equivalent at one of the recognized Schools of Architecture, have subsequently worked for a minimum period of one year in an architectural office, or
   (*b*) Assistants who having served or are serving their articles of pupilage with an architect; or who having worked in an architectural office for a minimum period of three years, have passed the R.I.B.A. Intermediate Examination or its equivalent at one of the recognized Schools of Architecture. . . . A.P.T., Grade III (£450-£495).
4. Assistants who having passed the R.I.B.A. Intermediate Examination, or its equivalent at one of the recognized Schools of Architecture, have worked in an architectural office for a period of two years. . . . A.P.T., Grade IV (£480-£525).
5. Registered Architects. . . . A.P.T., Grade V (£520-£570).
6. The grading of the posts beyond the level of the qualified assistant referred to in Paragraph 5 to be left, in the meantime, to employing authorities, due regard to be paid to the duties and responsibilities of each post and to the standard of grading adopted by the National Council for the posts set out above.

There is, of course, the usual protective clause providing that an officer who is at present more favourably graded than he would be under the above, shall not be down graded or suffer in any way by reason of these decisions.

Practice Notes

Edited by Charles Woodward [*A*]

THE HOUSING ACT, 1949. This Act, which came into force on 30 July 1949 and applies to England and Wales, makes the Housing Act, 1936, generally applicable to all houses, instead of to working-class houses only. The First Schedule to this Act removes all references to the 'working classes' in the 1936 Act. In interpreting the 1936 Act the Court has held that the use in statutes of the expression 'working classes' is inappropriate to modern social conditions and that there is no such separate class as the 'working class.'

The new Act prohibits a demolition order being made in respect of a house which is 'listed' or made subject to a 'building preservation order' under the Town and Country Planning Act, 1947. Instead, the local authority must make a closing order prohibiting the use of the house other than for a purpose approved by them. (Section 3.)

Loans to private owners may be made by a local authority for acquiring, constructing, converting, altering, enlarging, repairing or improving houses. This power is limited to a house or flat the estimated value of the fee simple in possession of

which does not exceed £5,000, the loan being permitted up to 90 per cent. of the value of the mortgaged interest. (Section 4.)

The limit of market value of a house fixed by the Small Dwellings Acts has been raised from £1,500 to £5,000 in respect of advances to occupiers and intending occupiers, and advances by instalments may be made up to 80 per cent of the works carried out. (Section 44.)

A local authority or a county council, may, with the approval of the Minister of Health, guarantee repayment of advances, with interest, made by Building Societies to their members for building or acquiring houses, whether or not within the district of the local authority or county council. (Section 5.)

A local authority may make allowances to persons displaced by premises being purchased under the 1936 Act, in respect of removal expenses, and also towards the loss due to disturbance of trade or business consequent upon the displacement. (Section 6.)

The local authority may acquire land for the purpose of altering, enlarging, repairing or improving an adjoining house or sell or lease such land to a person who will carry out such works. (Section 9.)

Bye-laws may be made fixing the number of persons who may occupy a house let in lodgings or occupied by members of more than one family. (Section 10.)

Where planning permission has been granted for the use as two or more separate dwelling-houses of a building previously used as a single dwelling house, the County Court may modify restrictive covenants in leases which prevent such a conversion. This is an extension of the power of the County Court under section 163 of the Housing Act, 1936. (Section 11.)

Grants may be made by local authorities to an applicant for the conversion of houses and other buildings and the improvement of dwellings. Applicants must own the fee simple in possession of the land or a period of not less than 30 years unexpired if held on lease. The local authority must be satisfied that the improvements will provide satisfactory housing accommodation for not less than 30 years from the completion of the work, and that the dwellings will satisfy such requirements as to construction, physical condition, services and amenities as may be specified by the Minister of Health. If a particular requirement is impracticable the local authority may still, with the consent of the Minister, approve the application. The estimated expenses in respect of each dwelling are not to be less than £100 nor more than £600, or such other amounts as may be prescribed from time to time. The upper limit of £600 may be exceeded with the consent of the Minister. (Section 20.) The amount of the grant must not be more than one-half of the approved expense of the work, but may be higher with the approval of the Minister. The grant may be paid by instalments as the work proceeds or after completion of the work. Instalments will be limited to one-half of the aggregate cost of the work at the time they are paid. (Section 21.)

The local authority when approving a grant must fix the maximum rent that may be paid in respect of the dwelling, except where the grant is solely for the improvement of a dwelling which has been let as a dwelling during the five years immediately preceding the date of the application. (Section 22.)

Where a grant has been made the following conditions will apply for 20 years after the dwelling is fit for occupation. The premises are to be used as a private dwelling-house unless otherwise allowed by the local authority. The dwelling must be occupied by the applicant, a member of his family or a person to whom the dwelling has been devised by the applicant. The dwelling must be let or kept available for letting at a rent not exceeding the maximum rent, and the rent payable by the occupier must not exceed the maximum. No fine or premium may be charged in addition to the rent. If a tenant assigns, no consideration other than rent may be made to the tenant. Where there is a breach of these conditions a proportion of the grant may be recovered by the local authority from the owner for the time being. (Section 23.)

Grants may be repaid voluntarily if the local authority agree. (Section 24.)

There are special provisions as to parsonages and almshouses. (Section 26.)

Provision is made for further improvement of improved dwellings. (Section 27.)

Provision is made as to dwellings improved under the Housing (Rural Workers) Acts, 1926 to 1942. (Section 28.)

Where subsequently to the execution of the improvement works, other works are carried out without grant, the local authority may, on application, increase the maximum rent by an amount not exceeding 8 per cent of the cost of the works. (Section 29.)

A dwelling to which this Act applies and which is let to a person in consequence of his employment by the landlord, will not be excluded from the restrictions on the right to possession under the Rent Restriction Act, 1933, by reason of the letting being otherwise than at a rent of two-thirds or more of the rateable value of the dwelling. (Section 30.)

Arrangements may be made between a local authority and a housing association or development corporation for the improvement of housing accommodation. (Section 31.)

The local authority for the purpose of grants in England and Wales (other than the county of London) is the council of the borough, urban district or rural district. In the county of London the London County Council and the metropolitan borough councils are the local authorities. In the City of London, the Common Council is the local authority. (Section 33.)

The Minister may make regulations, with the consent of the Treasury, with respect to the improvement of housing accommodation. Such regulations may be annulled by either House of Parliament. (Section 35.)

The expressions 'owner', 'rackrent', and 'improved' are defined. (Section 36.)

The standard amount of exchequer contribution for flats on expensive sites may be amended. (Section 37.)

The standard amount of exchequer contribution for houses on expensive sites may be amended. (Section 38.)

The standard amount of exchequer contribution for houses constructed to preserve the character of the surroundings may be amended. (Section 39.)

Exchequer contributions may be made in respect of hostels provided by a local authority or a development corporation. (Section 40.)

Exchequer grants may be made where the cost of a house has been increased by experimental methods of construction, or where experimental equipment or fittings have been used. This applies to a house provided by a local authority or a development corporation. (Section 41.)

The maximum selling and letting price of a new house or a conversion constructed under licence is to be controlled until 20 December 1953. Where licensed additions are made to a house already controlled as to maximum selling and letting price, these prices may be increased on application made to the local authority. (Section 43.)

Definition. (Section 50.) 'House' includes any part of a building which is occupied or intended to be occupied as a separate dwelling and includes a flat.

(The Act is obtainable at H.M. Stationery Office, price 1*s.* 0*d.* net.)

Circular 90/49, dated 15 September 1949, issued by the Ministry of Health to Housing Authorities in England and Wales, gives brief notes on the Act. It is obtainable at H.M. Stationery Office, price 6*d.* net.

A dwelling provided or improved under the Act must:

(i) be in all respects dry;
(ii) be in a good state of repair;
(iii) have each room properly lighted and ventilated.
(iv) have an adequate supply of wholesome water laid on for all purposes inside the dwelling;
(v) be provided with efficient and adequate means of supplying hot water for domestic purposes;
(vi) have an internal or otherwise readily accessible water-closet;
(vii) have a fixed bath, preferably in a separate room:
(viii) be provided with a sink or sinks and with suitable arrangements for the disposal of waste water;
(ix) be provided with facilities for domestic washing, including a copper preferably in a separate room;
(x) have a proper drainage system;
(xi) be provided with adequate points for artificial lighting in each room.
(xii) be provided with adequate facilities for heating each habitable room;
(xiii) have satisfactory facilities for preparing and cooking food;

(xiv) have a well ventilated larder or food store;
(xv) have proper provision for the storage of fuel;
(xvi) have a satisfactory surfaced path to out-buildings and convenient access from a street to the back door.

MINISTRY OF TOWN AND COUNTRY PLANNING. An appeal to the Minister was made under section 16 (1) of the Town and Country Planning against the refusal of the L.C.C. to allow completion of a development for which permission was granted in 1939 and 1940. In communicating the written decision of the Minister to the parties the following paragraph appears:
'I am to add that, although the Minister has allowed the appeal on its merits, he can not look with favour on a proposal by the Council which would mean taking advantage of the loss of a permission through circumstances beyond the control of the developer to alter their views on the merits of the development and which would result in the developer being unable to obtain compensation in respect of such part of the development as has already been carried out. In cases of this kind, the Minister considers that the Council should renew the permission by granting permission for the continuance and completion of the development and then if, on planning grounds, they consider that the development should not proceed they should have recourse to such powers as are available to them under the Act to terminate the permission and remove the development and thus enable the developer to claim compensation accordingly.'

(Control of Advertisements) Amendment Regulations, 1949. *Circular* 75, dated 19 September 1949, refers to Public Safety.
Regulation 16 (1) (*c*) of the 1948 Regulations requires local planning authorities, before determining any application for consent to display advertisements, to make certain consultations in cases where it appears to the authority that the display of advertisements to which the application relates may affect the safety of persons using roads, railways, inland waterways, docks and harbours.

The notes appended to the circular have been prepared in collaboration with the Ministry of Transport, and are designed to assist authorities in the discharge of their advertisement control functions by drawing attention to the main factors which should be taken into account in assessing the effect of advertisements on public safety. Particulars are also given of the appropriate points of consultation in respect of railways and inland waterways, including docks and harbours.

The notes should not be regarded as laying down universal rules. In accordance with the provisions of Regulation 4 of the 1948 Regulations, authorities are under an obligation to determine applications on the merits of each individual case and in relation to the actual circumstances in the locality concerned. Authorities should not reject applications on grounds of public safety unless they are satisfied that the risk of danger likely to be caused by the proposed advertisement is clear and specific.

MINISTRY OF EDUCATION. The Ministry has set up an Architects' and Building Branch which came into operation on 12 September. The new branch is under the joint control of the Chief Architect and Principal Priority Officer of the Ministry. (Administrative Memorandum No. 337, dated 2 September 1949.) The functions of the Branch will be:
(*a*) To investigate the architectural implications of new educational trends and to keep those concerned informed of the results of those investigations.
(*b*) To advise Local Education Authorities on building policies and procedure and the execution of their individual building programmes.
(*c*) To provide for Local Education Authorities, private architects and manufacturers a service of information and guidance on developments in design, technique and the supply of building labour and materials.
(*d*) To be primarily responsible for the handling of building projects after the stages of inclusion in a programme, approval in principle and, where necessary, agreement on a schedule of accommodation.
(*e*) To approve proposals for the purchase of furniture and equipment, except for school meals equipment.
The above function under (*a*) will be exercised jointly with the Inspectorate and 'user branches' of the Ministry.
The function of the 'user branches' in relation to building will be primary responsibility for consideration of the forward planning of the building provision in each area including the following:
(*a*) Approval of the Development Plan and Scheme of Further Education and Plan for County Colleges.
(*b*) Designation and acquisition of sites.
(*c*) Acquisition or renting of existing premises.
(*d*) Compilation of the educational building programme for each Local Education Authority within the limits of the national programme of educational building.
(*e*) Approval in principal of individual projects.
(*f*) Approval (where necessary) of schedules of accommodation.

The new arrangements refer only to projects submitted by or through Local Educational Authorities.

NATIONAL JOINT COUNCIL FOR THE BUILDING INDUSTRY. Lodging Allowance. As from 3 October 1949, National Working Rule 6 (B) (3) has been revised so that the lodging allowance is six shillings per night instead of five shillings.

MINISTRY OF WORKS. The Ministry have issued Advisory Leaflet No. 1, 1949, being notes on painting new plaster and cement. It is obtainable at H.M. Stationery Office, price 1*s.* 0*d.* net and 1*s.* 2*d.* post free, or through any bookseller.

Further leaflets will be issued, and are designed mainly to meet the needs of the small builder, clerk of works, foreman and craftsman for information in a practical and convenient form about the results of research and the latest developments in building practice.

QUANTITY SURVEYORS' FEES IN CONNECTION WITH HOUSING SCHEMES. The revised Scale of Charges authorized by the Quantity Surveyors' Committee of the R.I.C.S. for quantity surveying services in connection with work in Housing Schemes inside the curtilage of houses is now available, and copies can be obtained on application to the Secretary of the Institution (price 6*d.* each). It is not applicable to site works, roads, paths, main drains, sewers and other work outside the curtilage of the houses. The Scale of Charges for these latter services is published separately.

The Scale of Charges for quantity surveying services in connection with Flat Dwellings of more than two storeys in height for local authorities is also available on application (price 6*d.* each).

The above scales of fees have been submitted to the Minister of Health, who has intimated that he will not withhold approval to fees in accordance therewith.

NATIONAL BUILDINGS RECORD. The Eighth Annual Report of the National Buildings Record has now been published. It contains a summary, arranged county by county, of the photographic records of architecture which have been made. The collection has now reached a total of 351,875, of which 36,334 have been acquired during the year covered by this Annual Report. The R.I.B.A. is represented on the Council of Management by Mr. W. H. Ansell [*F*].

The address of the National Buildings Record is 37 Onslow Gardens, London, S.W.7.

LAW CASE. Landau v. Marchbank and Others (27 May 1949). In this case damages were claimed for failure by lessees to deliver up premises at the end of the lease in a good state of repair as required by the covenants.

On the determination of the lease the premises were sold for £7,000, which was admitted to be a good price, for conversion into two flats and two maisonettes.

The master, in assessing the amount due to the lessor under Section 18 (1) of the Landlord and Tenant Act, 1927, excluded from his calculations the cost of effecting repairs rendered valueless by the contemplated conversion but included all such repairs as were not so rendered useless.

The judge held that lack of repair was not in itself *prima facie* evidence of damage to the reversion, and before the lessor could recover any sum the Court must be satisfied not only that there had been a breach of the covenant to repair but also that, as the result of that breach, there had been a diminution in the value of the reversion. The plaintiff had not proved any such diminution and, accordingly, she was only entitled to an award of nominal damages. (1949. 2 All E.R. 172.)

Book Reviews

Pattern and Design, by *N. I. Cannon*. 9¾ in. 160 pp. text illus. Lund Humphries. 1948. £1 1*s*.

Mrs. Cannon has written a good and useful book. But it could have been a better and more useful book if she had written more. It is limited in its scope to one aspect only of the kind of education which the better schools of art are endeavouring to foster. It suffers chiefly because of this limitation. If we are to hope for greater integration amongst the arts it is important that text books of this sort should take greater cognizance of them all. Architecture—which in this reader's opinion is still the mistress of the arts—receives only a casual mention when Mrs. Cannon adventures on that most dangerous ground, 'The Principles of Design.' There we are presented with two drawings: the first shows the twin towers of Greenwich Hospital, and is cited as an example of unresolved duality; the second, we are astonished to learn, 'shows how Wren completed the final design by placing the Queen's House between them.' Pause for Inigo Jones to turn in his grave.

But this is only a minor criticism. There is much good and useful material here for the teacher whose job it is to direct the first steps of the potential art student. I say potential, because I suggest that therein lies the greatest weakness of this book. It aims 'at putting forward ideas for study and experiment which may lead students towards a personal interpretation' of design and pattern. It should have had as well the most practical purpose of enabling the staff to discover whether the student has creative ability at all. To a limited extent only, the course described in this book may fulfil that function. With such attractive direction as Mrs. Cannon gives us, it is easy to beguile oneself into the belief that one is creating something original when in fact one may only be echoing the teacher's ideas.

The book is attractively produced, with some two hundred drawings and photographs of students' work, and though primarily of value to art teachers there is in it much of great interest to the student.

CECIL STEWART [*A*]

Public Transport, by *Christian Barman* (The Things We See—No. 5). 8½ in. × 7 in. 64 pp. incl. pls. Text illus. Penguin Books. 1949. 2*s*. 6*d*.

A Penguin book which attempts to stimulate critical thought on public transport is both welcome and opportune. In a nine-page survey, 171 illustrations and concise captions *Public Transport* chiefly reviews British and foreign railways. The part played by transport in creating urban environment is stressed and the author adroitly avoids such topics as 'totems' and tavern cars by confining himself to pre-1939 British work.

The absence of critical comment suggests that the illustrations are intended to show examples of successful solutions of specific design problems. The passenger who travels daily and is familiar with the squalor of British stations and rolling-stock may well think the author's picture an unjustifiably rosy one. The King's Cross shanty-town and the shambles at Liverpool Lime Street are examples of architectural anarchy which would be tolerated nowhere else in the world, and although the author blames the passengers' destructive instincts for the lack of elegance and gaiety in transport property, is it not possible that such instincts are engendered by environment? As usual the consistent logic of the former L.P.T.B's. design policy is overwhelmingly apparent—it is putting the cart before the horse to attempt to improve vehicles and do nothing about the surroundings in which they operate.

Much of the British work is referred to as 'popular' and one is prompted to ask 'With whom?' 'The transport designer,' writes Mr. Barman, 'can never quite forget that there are passengers to be flattered and pleased.' As B.T.C. publicity officer let us hope he secretly prays with the rest of us that they may never *succeed*.

HAROLD WYATT [*A*]

The Design and Equipment of Hospitals, by *Ronald Ward*. 9¾ in. xvi + 360 pp. + pls. text plans. Baillière, Tindall and Cox. 1949. £2 2*s*.

The publication of this book provides the manufacturers of the game of 'Happy Families' with a pleasing and unique addition to their collection—Mr. Ward, the Hospital Architect! Its publication will be pleasing also to many architects and, according to the three celebrities whose forewords enhance the main work, to hospital administrators and doctors too.

Literature on Hospital Planning is scarce, as the acknowledgments in the bibliography so plainly show, and this book is probably the only comprehensive work of its kind published in England since Florence Nightingale's book, *Notes on Hospitals*, made its debut over 90 years ago.

The enormous amount of work to be done to realize the high hopes of the Minister in the National Health Service Act 1946 should be sufficient augury to ensure the success of a book which so modestly, simply and expertly, states the problems and the accepted solutions in each of the aspects of hospital planning.

It is a book for the expert or anybody directly interested in hospitals. It is not a 'week-end' book, or one to be read for its novelty. But to say so is not to condemn, but rather to place it amongst those heavily thumbed books of reference into which the expert delves to stimulate his insatiable and critical talents for further improvements, and to which the beginner turns to pick up the rudiments of the art.

Most of the shortcomings in the examples are not necessarily those of the author, but the unsatisfying part of the history of hospital development during the past 100 years, and they give ample evidence that hospitals have been the most neglected of all the architectural Cinderellas.

On the continent, particularly in Sweden and in Switzerland during the war period, and recently in U.S.A., there have been many new and interesting experiments in the development of hospital planning, and it is to be hoped that rapid sales will permit the publication of a new edition which will include examples of these new ideas in the three forewords, eight sections, conclusion and bibliography of this well tabulated and presented volume.

S. E. T. CUSDIN [*A*]

A Regional Survey and Plan for Central and South-East Scotland. Prepared for the Central and South-East Scotland Regional Planning Advisory Committee by *Sir Frank C. Mears*. 13¼ in. xiv + 180 pp. + 54 folding maps + (10) pls. Edinburgh. [1948]. £2 10*s*.

The alternative wrapper title of this work, 'Forth and Tweed', in three words, summarizes the extent of the Region in which the contrast between conditions as they exist in the two river basins presents the main regional planning problem. The Forth Basin contains the eastern part of the Scottish Central Belt in which are located most of the main industrial and coal mining areas of the country, while the area drained by the River Tweed is almost wholly rural in character.

The Regional Survey examines the area under consideration, and in the light of geographical and geological conditions, shows how natural features have played their part in moulding past developments, starting from a time when people living in small scattered communities produced locally most of their necessities of life, although carrying on a gradually increasing exchange of raw materials and merchandize resulting in the development of the Burgh as the market centre. During this period the population increased slowly, but with the concentration of industry in large mills and factories and later the intensive exploitation of the coalfields resulted in a rapid growth in the number of people. This increase in certain localities has led to maldistribution of population between town and country and presents the greatest single problem in the Region. The primary object of the planning team, therefore, has been an analysis of the problem, supported by methods recommended to alleviate and, in time, overcome this unbalance. How this unbalance has occurred is discussed in detail, and the two major causes lying at the root of the trouble, decline in fertility and internal and external migration, are examined along with the analysis of the relationship and distribution of sex and age groups, as well as occupation. The picture produced is alarming and shows a most unhealthy situation. The population of Edinburgh, for example, has grown at the expense of the Border counties, and the movement of the younger people into the city has resulted in a higher average in the

population of the rural areas. It is shown, however, that without this steady flow of immigrants, the urban birth rate would tend to fall below reproduction level.

The effect of population changes have a direct relationship to the use of the land as well as the quality of the land itself. Agricultural production increased with the aid of science until it reached its peak in Scotland about 1875. Thereafter there has been a growing reversion to grazing and an increase in dairying throughout the Region, and arable cultivation has been progressively concentrated on the fertile land along the shores of the Firth of Forth. The very existence of the concentrated mass of population in this area, coupled with climate and fertility of soil, has stimulated the development of market gardening on a scale resembling mass production. While, therefore, agricultural production in these areas has been increased, there has been a steady retrogression elsewhere from arable land; and while this retrenchment is taking place in the more fertile areas, an equally alarming set of circumstances exists in the hill pastures, where the loss of land fertility and the difficulty in obtaining shepherds have resulted in whole areas becoming derelict, with exhausted soils, abandoned farms, and vanished communities. In addition to this moorland encroachment of land, which used to support an agricultural population, there are many areas which were once reclaimed from moorland but are now reverting to their original condition through neglect.

In the towns and villages of the industrial areas of the Region the problem is created largely by the result of specialization, which fostered the one-industry community during the last century. Thus in the coalmining and heavy engineering centres where there is on the whole no female employment, women must either travel long distances to work, or leave the area altogether. Conversely in the textile towns of the Borders there is work for women, but little scope for men. To meet the increasing coal production in the Region, and in view of the general shortage of manpower, redistribution of industrial population in the Central Belt is envisaged. This is not to occur in a haphazard manner, but is to be regulated so that there will be adequate social facilities, as well as diversity in occupations available. In an area which has been settled for centuries most of the good town sites are already occupied, and the problem is, therefore, to avoid sporadic growths, and to ensure that the expanded urban area will be of sufficient size to support proper social and occupational facilities to meet Scottish conditions and to promote the well-being of groups of communities.

After the Survey comes the Plan, but it does not take the form usually associated with regional advisory plans. There is no single map in which the various proposals are dovetailed into one another and presented as a complete picture of the regional scheme. Instead the survey is followed by detailed studies which analyse, in turn, Communications, the Forth Basin, the Tweed Basin, and Recreation and Amenity. This rather unorthodox approach may give a first impression of an inconclusive scheme in which the various components are never truly related one to another. When, however, the very diverse conditions are considered, it becomes clear that while the orthodox plan largely meets the case in the Forth Basin, an entirely different approach is required in the Tweed valley, where the population level has fallen almost to danger point. In this case the solution is not to be found in physical planning alone. Physical reconstruction is essential to reclaim land and provide improved communications and utility services, but the final solution involves economic planning.

To understand why the Plan has taken this form it is necessary to return to the Conclusion to the Regional Survey, where it is stated: ' . . . the Forth and Tweed Basins include features so widely different in character as the City of Edinburgh and the Ettrick Forest, the Merse and the Slamman Plateau, and under these dissimilar conditions the distribution and occupation of the people vary greatly, so that the Region as a whole may fairly be said to represent a microcosm of Scottish life outside of the North-West Highlands and Islands. This is a factor of great importance from the planning standpoint, for the traditions and initiative of the Scottish people are largely a reflection of their varied homeland, and great harm may result if the application of standardized methods is attempted.

'All planning schemes, therefore, if they are to be successful, must be directed so that the land may be used in the best way to promote a variety of conditions and occupations under which the traditional way of Scottish life may be maintained.'

This is an unorthodox report, simply presented and most interestingly written, which seeks the physician's cure rather than the surgeon's operation for one of Scotland's most serious maladies.

Vom Bau Der Kirche, by *Rudolf Schwarz.* 2nd ed. 10½ in. (viii) + 167 pp. text illus. Heidelberg: Lambert Schneider. 1947.

Rudolf Schwarz has built a considerable number of Catholic churches and designed many more. At present he is the planner responsible for the reconstruction of Cologne. At 30 he was the Head of the Aachener Kunstschule, which like the Bauhaus was closed in 1933. Like Gropius, he is a great architect and a great teacher, and although he remained in Germany during the Nazi period, his intellectual power and moral integrity were never compromised. He replanned the war-destroyed villages of Lorraine, eventually becoming the regional planner for that country, but a large part of his work has consisted in attempts to find a fundamental solution to any problem with which he has been faced, and his writings are as important as his buildings.

Vom Bau der Kirche deals with the design of churches, and it shows his reasoning to be part of a universal understanding, which is the secure basis from which good design arises. But it does not give the information which a chapter on church design in 'Planning' would contain. It deals neither with the programme, nor the structure, nor the construction, nor the costs. In hundreds of stimulating and fruitful ideas it suggests the fundamental patterns of designs, which are as convincing as they are original. It gives the thoughts, which to the devout student might reveal the 'arcanum magistri,' the secret of the master.

Dr. Schwarz's book is on the whole quite untranslatable, and it is futile to take one or two paragraphs from their context. The writer proceeds logically from thought to thought, from parable to architectural interpretation of parable, and there is no doubt that the parable and the symbol are more successful, architecturally, as a basis of design, than any 'good manners in architecture' or any æsthetic modulus or set square.

With all books of architectural theory there is a great temptation to look up the actual designs of an author who professes so much. Rudolf Schwarz emerges well from this test. His churches are masterly and moving, be it a village church in the Eiffel mountains, or the Fronleichnamskirche in Aachen, or the design for a cathedral in Milwaukee.

The volume is illustrated with a number of perfectly drawn sketches of great simplicity, which illuminate the physical meaning of the religious and philosophical ideas.

GERHARD ROSENBERG [*A*]

Planning the Modern City, by *Harold MacLean Lewis.* 2 vols. 10½ in. by 7⅞ in. New York: John Wiley; Lond.: Chapman and Hall. 1949. £1 16*s.* each.

Planning the Modern City is a revision and expansion of a comprehensive work on town and country planning first published by the author's father in 1916. It is based on the two assumptions that planning problems are and must be engineering problems, and that most planning work consists of correcting past blunders. If these assumptions are sufficiently qualified most planners might accept them, but Mr. Lewis does not qualify the first quite enough to satisfy most British planners. He describes the aims and principles of the main aspects of planning—redevelopment, zoning, neighbourhood layout and the rest—but he is obviously most at ease when he can get down to honest-to-God practical problems, especially engineering ones. There is a gap noticeable between broad statements of principles and illustrations of how particular problems have been solved in various towns.

The book enables one to visualize very clearly the life of a busy, experienced American planner. He is concerned mostly with the larger towns in which it is very difficult—unless a local planning commission has been set up—to secure steady backing for a plan over any long period. The average American tends to admire the more showy features of Continental planning while flatly rejecting the controls which alone would enable such features

to become general in American towns; hence the leaning towards grandiose civic centres which would, as it were, give maximum town planning results in a minimum area. The planner's job is therefore to provide a good expanding framework for the town, fortified by such controls as local opinion will stand, and then to concentrate on specific improvements—each of which must get through on its own merits. Many of these are improvements in communications and in handling passengers and goods at congested points. It is noticeable that American planners are consulted on, or at least are very interested in, highly specialized problems—such as the handling of 'less than car-load' goods and parcels traffic between New York railway terminals. One would like to see whether a British planner could make a success of a comparable job.

Examples of these specialized problems—airports, harbours, and so on—are conspicuous to British eyes but do not form a very large part of the two volumes. All other aspects of planning are there as well, and the illustrations cover most of the well-known places and solutions and a good many others.

The book is not up to date on planning in this country and much of what it says on methods and procedure is naturally applicable only in the States. It belongs to the reference book rather than the text book class and—at 72*s*. for the 2 volumes—will usually be consulted in a library rather than in the office.

H. MYLES WRIGHT [*A*]

Squared Circles and Spheres, Cubed Spheres and Related Equivalents.—Spheres and Cubes as Doubled Volumes. By *Charles Cressey*. Each 9 in. 26 pp., 16 pp. text illus. The author. 1949. $1, $1.50.

Mr. Charles Cressey, a retired Fellow of the R.I.B.A., living at 2135 28th Avenue, San Francisco 16, California, has for some time been studying 'Speculative Geometry and Basic Measurements', and it is understood that he intends publishing the results of his studies in due course under this heading.

In the meantime he has published separately in two small books certain selective items; the first is entitled *Squared Circles and Spheres, Cubed Spheres and Related Equivalents*, and it is stated to be 'An inquiry into basic dimensional balance, geometric structure and methods of exchange, including original ratios, conversion theories and new root progressions.' The second is entitled *Spheres and Cubes as Doubled Volumes*', and is stated to be a 'Study of an ancient problem from a new point of view, supplemented by spherical applications, new progressions, and original ratios.'

Mr. Cressey has been kind enough to send copies of both these books to the R.I.B.A. Library, and to the second book he has added some 'Supplemental notes and diagrams—Examples Ca and Fl,' Fig. VI.—6a, and Fig. VI.—8b respectively, which will be found affixed at the end of the second book.

It is, indeed, refreshing to one's thoughts to read in these books how Mr. Cressey, breaking away from traditional methods, has accomplished by means of geometry what has for ages been accepted as impossible by means of numbers, namely, the precise squaring of the circle, the cubing of the sphere, and the duplication of the volume of the cube and the sphere.

To appreciate fully what the author has done one must understand his theory that 'Numbers in themselves do not originate form directly, but reflect it'; one must also understand his suggestion 'That numbers—as a system—depend initially on graphic demonstration.' These ideas seem to give a prior place to geometry in the science of mathematics, and this has considerable architectural interest to those, who, like myself, believe in geometry as the only sound basis for well-proportioned design. Mr. Cressey explains that 'Geometrics are too often regarded as illustrations only of ideas presumed to be originated by formula (or numerical combinations) however graphic the motivation. Numbers and symbols instead represent shorthand information, translations or summations.'

The diagrams, which at first sight appear to be particularly clear, are not always easy to follow, and I found it necessary to redraw them in order to understand their constructions, which follow rigidly throughout the old Rule and Compass contention.

There are probably special fields of work in which the results of this new research into geometry will be of great value, but the author does not suggest what they are. Possibly he intends to do this in his more complete work promised in the future. Architects are sure to wonder how Mr. Cressey thinks architecture in particular—in any of its numerous considerations—will benefit either directly or indirectly from his discoveries, and some information from him on this point would be helpful. The balancing of the volume of a sphere with that of a cube is not a problem which architects often have to consider; in fact, the square and the cube are more often than not shapes which architects desire to avoid—except in very special problems—in architectural composition. Nevertheless, the information given about roots, root progressions and root expansion frames, deformations, reassemblies and elastic stretch are of considerable general interest. The geometrical constructions throughout contain many thrills, none more marked, I think, than the re-formation of six hexagon sectors as straight-line triangles (equal altitudes) to develop a rectangle of equal area. Such area-to-area relations have many applications, and in this connection the reassembly of the natural sectors of a circle converted into equivalent triangular sectors (of equal altitude) and arranged as a rectangle of equal area is of special interest, as by this means one has geometrical demonstration that the circle can be squared precisely. Here you have theoretical geometrical precision, a quality which is lacking in the fractional extensions in the ratio Pi (3.14156 . . .) numbers which are indeterminate and which have to be used for the numerical calculations of the area of a circle. As I see these books, I fancy that the information they contain is likely to be of greater interest architecturally to the members on the R.I.B.A. Architectural Science Board than to members of the profession as a whole.

A. LEONARD ROBERTS [*F*]

Das Sitzmöbel, etc., by *K. Nothhelfer*. 2nd ed. 11½ in. 507 pp. text illus. Ravensburg: Otto Maier. 1948.

Furniture making and design is at present passing through a critical period. During the last ten years hardly anything but utility furniture has been produced in this country. This type of furniture has been designed and manufactured to serve an emergency, and although it may have fulfilled this function it certainly has not fulfilled all basic conditions of good furniture: durability (good craftsmanship), comfort and beauty.

However, it has had a cleansing effect by preventing so far a revival of the cheap pre-war furniture which frequently was shoddily made and of extremely bad taste. But whether this benefit is to be a lasting one will now largely depend on designer and manufacturer. The lifting of certain restrictions has already restored a fair amount of freedom of choice, and a reaction to uniformity and over-simplicity after ten years of austerity is only natural and to be welcomed.

It will, therefore, be up to the manufacturer and designer to produce now such furniture which in quality and comfort will match the traditional high standard of previous periods in this country, and in design should be elegant, beautiful and a true expression of our time. Nothing less than such sound development and high standard and neither modernistic and flashy design nor senseless mass-copying of imported idioms—even if they come from Scandinavia—can win the public and prevent them from turning back towards the meaningless reproduction of period furniture.

Every contribution towards this goal must be most welcome, and the book in front of me, *Das Sitzmobel*, by Nothhelfer—a book on the design and construction of chairs and settees—certainly is of great interest. The text is precise and clear, it covers all aspects of the subject, and is full of sound technical knowledge based on the achievements and the development in this line of furniture-making during the past. It is fully and admirably illustrated. Even if the text may not always be easy to follow because it is written in German, the abundance of scaled working drawings alone, in the majority based on good design, will make it a valuable help to manufacturers, designers and students. These drawings provide sound norms, standards and measurements, and their study will help to avoid grave mistakes.

It is, however, regrettable that to this second edition no chapter was added about the pioneer work with recently developed methods and materials.

RUDOLF FRANKEL [*F*]

Notes and Notices

NOTICES

Inaugural General Meeting, Tuesday 1 November 1949 at 6 p.m.
The Inaugural General Meeting of the Session 1949-50 will be held on Tuesday 1 November 1949 at 6 p.m. for the following purposes:

To read the minutes of the Eleventh General Meeting of the Session 1948-49 held on 21 June 1949.

Mr. Michael Waterhouse, M.C., President, to deliver his Inaugural Address of the Session.

To present the Distinction in Town Planning Diploma to Mr. R. H. Matthew [*A*].

(Light refreshments will be served before the meeting.)

Second General Meeting, Tuesday 15 November 1949 at 6 p.m.
The Second General Meeting of the Session 1949-50 will be held on Tuesday 15 November 1949 at 6 p.m. for the following purposes:

To read the minutes of the Inaugural General Meeting held on 1 November 1949; formally to admit new members attending for the first time since their election.

The Hon. Lionel Brett, M.A. [*A*] to read a paper on *Second Thoughts on Planning*.

(Light refreshments will be served before the meeting.)

The Reception of New Members at General Meetings
The procedure for the introduction and reception of new members at General Meetings has been revised and is now as follows. New members will be asked to notify the Secretary R.I.B.A. beforehand of the date of the General Meeting at which they desire to be introduced and a printed postcard will be sent to each newly-elected member for this purpose. On arrival at the R.I.B.A. new members must notify the office of their presence and will then take their places in the seats specially numbered and reserved for their use. On being asked to present themselves for formal admission, the new members will file out in turn into the left-hand aisle and after shaking hands with the Chairman will return to their seats by way of the centre aisle.

It will not now be necessary for new members to be accompanied by supporters.

Formal admission will take place at all the Ordinary General Meetings with the exception of those on the following dates:

1 November 1949 Inaugural Meeting.
7 February 1950. Presentation of Medals and Prizes.
4 April 1950. Presentation of Royal Gold Medal.

NOTE.—There will be no General Meeting on 29 November 1949.

Classes of Retired Members
Under the provisions of Bye-law 15 applications may be received from those members who are eligible for transfer to the class of 'Retired Fellows', 'Retired Associates' or 'Retired Licentiates'.

The Bye-law is as follows:—

'Any Fellow, Associate or Licentiate who has reached the age of 55 and has retired from practice may, subject to the approval of the Council, be transferred without election to the class of "Retired Fellows", "Retired Associates", or "Retired Licentiates", as the case may be, but in such case his interest in, or claim against the property of, the Royal Institute shall cease.

'The amount of the annual subscription payable by such "Retired Fellows", "Retired Associates" or "Retired Licentiates" shall be one guinea, or such amount as may be determined by resolution of the Council, excepting in the case of those who have paid subscriptions as full members for 30 years, and who shall be exempt from further payment. A "Retired Fellow", "Retired Associate" or "Retired Licentiate" shall have the right to use the affix of his class with the word "Retired" after it, shall be entitled to receive the JOURNAL and Kalendar, shall be entitled to the use of the Library, and shall have the right to attend General Meetings, but shall not be entitled to vote. A "Retired Fellow", "Retired Associate" or "Retired Licentiate" shall not engage in any avocation which in the opinion of the Council is inconsistent with that of architecture. Nothing contained in this Bye-law shall affect the rights of persons who at the date of the passing of this Bye-law are members of the classes of "Retired Fellows" and "Retired Members of the Society of Architects" '.

Architectural Competitions—Assessors' Awards
All architects who take part in architectural competitions are reminded by the Council of the R.I.B.A. that participation in a competition is a definite acceptance of the principle that the award of the assessor is final and binding upon themselves as well as upon the promoters, and that any competitor who feels that he has real ground for dissatisfaction with an assessor's award should communicate with the Secretary of the R.I.B.A.

Moreover, all architects, whether competitors or otherwise, are reminded that discussion or correspondence in the public or professional Press which tends to criticism or disparagement of an assessor or award can not alter the final and binding effect of the award, but may prejudice architects and the whole competition system in the opinion of the public, and is therefore, highly undesirable.

R.I.B.A. Diploma in Town Planning
Members are reminded that the Council of the Royal Institute have decided that the R.I.B.A. Diploma in Town Planning shall be discontinued.

The examination to be held in 1950-51, the closing date for applications for admission to which is 1 January 1950, will be the last examination qualifying for the R.I.B.A. Diploma in Town Planning, and will be based on a revised syllabus and time-table.

Any candidate who fails at that examination to satisfy the examiners will be unable subsequently to qualify for the R.I.B.A. Diploma.

A copy of the new syllabus may be obtained on application to the Secretary, R.I.B.A.

The Use of Titles by Members of the Royal Institute
In view of the passing of the Architects' Registration Act 1938, members whose names are on the Statutory Register are advised to make use simply of the title 'Chartered Architect' after the R.I.B.A. affix. The description 'Registered Architect' is no longer necessary.

Correspondence with the Institute
In order to facilitate speedier attention to correspondence, and to relieve the staff of a great deal of research, it is particularly requested that members and students will kindly state in all correspondence with the Institute the class of membership (F, A, L or Student) to which they belong.

Members and Professional Affixes
The Council's attention has been called more than once to the practice, among some members, of adding a string of letters of doubtful value to the affix indicating membership of the Royal Institute on their letter paper.

This is a matter in which the Council obviously can not dictate to members, and must trust to their good sense. It should be obvious, however, that the affix of a chartered body of high standing is weakened in effect by the addition to it of a string of other mysterious designations some of which probably indicate no more than the payment of an annual subscription.

Licentiates and the Fellowship
By a resolution of the Council passed on 4 April 1938 all candidates whose work is approved are required to sit for the Examination, which is the design portion of the Special Final Examination, and no candidates will be exempted from the examination.

Note.—The above resolution does not affect Licentiates of over 60 years of age applying under Section IV, Clause 4 (*c*) (ii) of the Supplemental Charter of 1925.

Cessation of Membership
Under the provisions of Bye-law 21 the following has ceased to be a member of the R.I.B.A.

As Associate
Marcus Hope Norris.

COMPETITIONS

Festival of Britain, 1951. Architectural Competitions

1. Vertical Feature, South Bank Exhibition
The Festival of Britain Office invite designers, architects, engineers and students in these professions, normally resident or practising in Great Britain, to submit designs in competition for the Vertical Feature proposed to be erected on the site in the South Bank Exhibition.
Assessors: The Presentation Panel of the Festival of Britain, viz.: Mr. Gerald Barry [*Hon. A*], Mr. Cecil Cooke, F.R.S.A., F.I.A.M.A., Mr. Misha Black, O.B.E., F.S.I.A., Mr. Hugh Casson, M.A., M.S.I.A. [*F*], Mr. Ian Cox, M.A., Mr. Antony Hippisley Coxe, Mr. James Gardner, O.B.E., R.D.I., F.S.I.A., Mr. James Holland, F.S.I.A., Mr. Mark Hartland Thomas, M.A., M.S.I.A. [*F*], Mr. Ralph Tubbs [*A*].
Premiums : £300, £150, £100.
Last day for submitting designs: 14 November 1949.

2. Restaurant, South Bank Exhibition
The Festival of Britain Office invite architects and Students R.I.B.A., normally resident or practising in Great Britain, to submit designs in competition for the Restaurant proposed to be erected on the site in the South Bank Exhibition.
Assessors : Mr. Misha Black, O.B.E., F.S.I.A., Mr. Hugh Casson, M.A., M.S.I.A. [*F*], Mr. R. Furneaux Jordan [*F*], Mr. Mark Hartland Thomas, M.A., M.S.I.A. [*F*], Mr. Ralph Tubbs [*A*].
Premiums: £250, £200, £150.
Last day for submitting designs: 21 November 1949.

Conditions of both competitions may be obtained on application to the Secretary of the Presentation Panel, 'Festival of Britain, 1951', 2 Savoy Court, W.C.2, the envelope being marked 'Competition'.

Competition for the Interior Design of the Modern Public House
The Architectural Press, Ltd., invite architects and designers to submit designs in competition for four bars in contemporary public houses.
Assessors: Mr. Hugh Casson, M.A. [*F*], Mr. J. S. Eagles, M.B.E., B.A. (nominated by the Brewers Society), Mr. R. Furneaux Jordan [*F*], Mr. E. B. Musman, B.A. [*F*], Mr. J. M. Richards [*A*] (representing the Editors of THE ARCHITECTURAL REVIEW).
Premiums: £500, £250, £100.
Last day for submitting designs: 28 February 1950.
Last day for questions: 15 November 1949.
Conditions were printed in the October number of THE ARCHITECTURAL REVIEW.

University of Nottingham: Proposed Hall of Residence
The Council of the University of Nottingham invite architects to submit designs in competition for a Hall of Residence for Women Students on the Lenton Fields Estate, Beeston Lane, Nottingham.
Assessor: Sir Percy Thomas, O.B.E. [*F*].
Premiums: £1,000, £750, £500.
Last day for submitting designs: 11 March 1950.
Last day for questions: 1 November 1949.
Conditions may be obtained on application to The Registrar, The University, Nottingham. Deposit £2 2*s*.

Civic Hall, Guildford
The Guildford Borough Council invite architects registered in the United Kingdom to submit designs in competition for the Civic Hall which they propose to erect in Guildford.
Assessor: Mr. G. A. Jellicoe [*F*].
Premiums: £1,000, £500, £250.
Last day for submitting designs: 30 April 1950.
Last day for questions: 15 November 1949.
Conditions may be obtained on application to the Town Clerk, Municipal Offices, Guildford. Deposit £2 2*s*.

Competition in Connection with York Festival, 1951
The York Festival Society Ltd. invite architects resident in Great Britain or Eire to submit designs in competition for a block of flats in Paragon Street, York, to be built in connection with the York Festival of 1951.
Assessor: Mr. W. A. Eden, M.A., F.S.A. [*A*].
Premiums: £250, £150, £75.
Last day for submitting designs: 18 January 1950.
Last day for questions: 12 November 1949.
Conditions may be obtained on application to Keith Thomson, Esq., Artistic Director, York Festival 1951, 1 Museum Street, York. Deposit £2 2*s*.

Whitehaven: Arts Centre
The Whitehaven Corporation invite architects resident in this country to submit designs in competition for the Public Hall and Restaurant, which they propose to erect in Whitehaven.
Assessor: Mr. Harold A. Dod, M.A. [*F*].
Premiums: £300, £200, £175.
Last day for submitting designs: 15 March 1950.
Conditions may be obtained on application to the Town Clerk, Town Hall, Whitehaven, Cumberland. Deposit £2.

BOARD OF ARCHITECTURAL EDUCATION

R.I.B.A. (Archibald Dawnay) Scholarships, 1949-50
The R.I.B.A. (Archibald Dawnay) Scholarships for 1949-50 have been awarded as follows:
A Scholarship of £60 to Mr. E. J. Williams of the Welsh School of Architecture.
A Scholarship of £60 to Mr. W. A. Greig of the Aberdeen School of Architecture.
A Scholarship of £60 to Mr. A. H. Bannerman of the Aberdeen School of Architecture.
A Scholarship of £60 to Mr. J. M. Pollard of the Leicester School of Architecture.
A Scholarship of £60 to Mr. J. Bonnington of the School of Architecture, King's College, Newcastle-upon-Tyne.
A renewal of the Scholarship of £60 awarded for the Session 1948-49 to Mr. Kimball Pollit of the Leeds School of Architecture.
A renewal of the Scholarship of £60 awarded for the Session 1948-49 to Mr. Frank Shaw of the Leeds School of Architecture.
A renewal of the Scholarship of £60 awarded for the Session 1948-49 to Mr. R. C. Marshall of the Leeds School of Architecture.
A renewal of the Scholarship of £60 awarded for the Session 1948-49 to Mr. A. R. C. Johnston of the Liverpool School of Architecture.

ALLIED SOCIETIES

Changes of Officers and Addresses
Hampshire and Isle of Wight Architectural Association—Central Chapter. Chairman, Mr. H. S. Sawyer, M.C. [*F*], Queen Anne Chambers, High Street, Winchester. *Western Chapter*. Chairman, Mr. W. G. Seaton [*A*], 23 Richmond Park Avenue, Bournemouth. *Eastern Chapter*. Chairman, Mr. R. A. Thomas [*F*], Northern Road, Cosham, Portsmouth.
Norfolk and Norwich Association of Architects. Correspondence addressed to the Hon. Secretary, Mr. C. J. Tomkins, should in future be addressed to him at the City Hall, Norwich, and *not* to his address in Grove Walk, Norwich.
The Royal Incorporation of Architects in Scotland—Stirling Society of Architects. Secretary and Treasurer, Mr. James N. Dandie, Solicitor, 14, Dumbarton Road, Stirling. *Edinburgh Architectural Association*. President, Mr. Leslie Grahame-Thomson, R.S.A. [*F*], 6 Ainslie Place, Edinburgh 3.

GENERAL NOTES

R.I.B.A. Golfing Society
The final meeting of the year was held at Sudbury Golf Club on 28 September, when the R.I.B.A. played for the Selby Cup. In the evening a meeting was held and W. R. F. Fisher [*F*] was elected Captain for the ensuing year. The remaining officers and members of the Committee were re-elected, and H. L. Bloomfield [*F*] and A. H. Watkins [*L*] elected to the Committee.
The results of the Competition were as follows:
The Selby Cup and Spoon.
Winner: E. H. Firmin 75—5=70.
Runner-up: F. Sutcliffe 92—16=76.
The afternoon 4-ball bogey competition was won by G. F. Wilson and Marshall Walker with a score of 9 up.

Review of Films—12

The country of origin and date of release are given first. The film is in monochrome unless otherwise stated. The sizes (35 *mm. and* 16 *mm.*) *are given. Sound films are marked 'sd.', and silent st.' The running time is given in minutes.*
(*F*) *indicates free distribution.*
(*H*) *indicates that a hiring fee is payable.*

St. Paul's
Britain 1941.
Summary. Opening with some general shots of St. Paul's, the film explains that after the cathedral had been burnt down three times the present building was erected in the reign of Charles II, by Sir Christopher Wren, who also produced a scheme for the replanning of London. On great occasions the cathedral plays a prominent part in the life of the nation. The film takes the viewer on a tour of the cathedral, pointing out the work of sculptors and artists, the tomb of Wren in the crypt, and the burying place of famous soldiers and sailors. A vivid picture is given of the raids of 1940 and the way in which, although a bomb fell through the crypt and another destroyed the altar, the main fabric of the cathedral was preserved by the fire fighters.
Appraisal. A well-balanced film in which interest is maintained. The photography is good and the commentary clear and stimulating. While the film will have little appeal for architects owing to its superficial treatment, the architectural material in the film is well used. Perhaps too much emphasis is laid on the fire fighting shots, but generally the film is stimulating without being sentimental.
35 sd. 16 sd. 14 minutes. British Council (not generally available for hire).

Steel
Britain 1946. (*F*) Technicolor
Summary. The method of making crude steel in the 18th century is compared with the modern processes in the production of high grade steels, the instrument and laboratory tests necessary for the control of the quality and type of steel being shown for the various processes. The film opens with the ore being dug from the ground and transported to the works for smelting at high temperatures to remove the impurities. The resultant iron, in the form of 'pigs', is then shown being converted to steel by the various processes, the type of alloy steel being controlled by the addition of other materials.
The Bessemer converter process, the electric arc process and the open hearth process are all shown, as are the secondary processes of manufacture in the rolling into girders, or manufacture into pipes and tubes or the rolling of sheets of varying thicknesses and properties for the many commercial uses such as for car bodies, plates for ships and tanks.
Appraisal. A film which would give a general idea of the process of steel production to a lay audience. The repetition of typical views and processes which are not clearly explained tend to create a monotony. The use of diagrams to explain the different processes would have been useful. In the main a difficult subject has been well photographed, although in places the colour does not add to the clarity, some of the sequences showing molten steel tending to become tiring. On occasion the background noises are apt to drown the commentary. On the whole the film succeeds in using the material in a dramatic way and in making a difficult subject interesting.
35 sd. 16 sd. 35 minutes. Central Film Library, Imperial Institute, S.W.7. (Reference No. U.K. 798.)

Obituaries

David John Chisholm, M.C. [*A*], of the firm of Messrs. Dick Peddie, McKay and Jamison, of Edinburgh, died on 27 July, aged 64.

All those who knew him as an architect, and had the opportunity of appreciating his exceptionally fine draughtsmanship, and thorough knowledge of Gothic and Classic detail will realize the loss which the profession has suffered.

He was educated at the Edinburgh School of Applied Art and the Edinburgh School of Art, where he gained a Travelling Scholarship. During this period he was apprenticed to Messrs. Peddie and Washington Brown in Albyn Place, Edinburgh. Subsequently he attended the Royal Academy, London, where he won the Royal Academy Gold Medal and was awarded another Travelling Scholarship. While in London he held appointments with Messrs. J. S. Gibson and Gordon, the L.C.C. Schools Department, and Sir Arthur Blomfield and Sons.

While travelling in Italy in 1914 he was recalled to this country on the outbreak of war and served with distinction in the London Scottish, being awarded the Military Medal, Military Cross, and was mentioned in dispatches.

At the end of the 1914-18 war he went back to Edinburgh and, for a short time, held an appointment with the Department of Health for Scotland. He then returned to the firm of Dick Peddie and Walker Todd, and after a few years assumed partnership with the late Mr. Walker Todd, A.R.S.A.

During his long association with No. 8 Albyn Place, Edinburgh, he assisted in the design of many important buildings, the principal being Merchiston Castle School, Linlithgow County Buildings, St. James's Episcopal Church Hall, Leither, St. Aidan's Church, Niddrie, the Royal Bank, Gilmerton, the Royal Bank, Balerno, and the Royal Bank, Kirkwall.

Mr. Chisholm is survived by Mrs. Chisholm and a daughter.

William Alfred Pite [*Ret. F*]. In addition to the appreciation by Mr. Hubert M. Fairweather, C.B.E. [*F*], which appeared on page 507 of the September 1949 JOURNAL, the following appreciation has been received from Mr. Alner W. Hall, M.C. [*F*]:

'I was grieved to see the announcement of the death of my old friend William A. Pite, a great architect, who in his specialist hospital work has left many examples of his skill in planning and design. It is not so much about his work, however, that I wish to write, but I wish to record my appreciation of him as I knew him. When I was a young man working in my father's office as a pupil of Keith Young's, my late partner, it was always made very clear to me that Mr. Pite in his hospital work was one of the "original" thinkers, and I heard Young say on many occasions: "I wonder what Pite thinks of this?" or "What is Pite doing about this or that?" and his views were sought on the problems under consideration. I used to live not far from him at Ealing, and often visited him at his charming house designed, I believe, by himself, and would discuss with him my problems, always coming away with his views very clearly expressed, with much valuable information and knowledge gained. In those days Pite, Keith Young and my father used to see much of each other, and both Keith Young and my father always had a very real appreciation of all Pite's work. I remember shortly before his great hospital, King's College Hospital, Denmark Hill, was opened he took Young and myself all over the new building explaining in detail, in his clear way, all his newest ideas of design and construction embodied in this great group of buildings. I am happy to think that many years later I was able to return the compliment as I took him and his son Robert over my Middlesex Hospital Nurses' Home, when they both expressed their pleasure at the visit and made favourable comments. Looking back to those days one appreciates how much these three men (pioneers I would call them) did to revolutionize hospital planning in this country, by which we who are carrying on would do well to remember and profit when planning new hospitals so urgently needed. I like to think that always the two firms of Pite, Son and Fairweather and Young and Hall have been on the most friendly terms. Mr. Pite will be sorely missed by his family and by his brother architects.'

Josiah Auty [*Ret. F*,] who practised for a number of years in Chichester, Sussex, was 67 when he died suddenly on 23 July 1949 at his home, 'Whitecot', Albion Road, Sutton, Surrey.

Born in Morley, Yorkshire, Mr. Auty was at one time assistant with Mr. W. Carby Hall, C.B.E. [*Ret. F*], in Leeds, and subsequently practised on his own account in Morley, carrying out some interesting commercial and domestic work in the West Riding prior to the advent of the 1914-18 war, during which he saw service with the Royal Army Service Corps.

In 1919 Mr. Auty was appointed Housing Architect to a Rural District in West Sussex, and later built up an extensive private practice in the South of England, covering a wide field of architectural subjects. Specializing in domestic work, he was commissioned by Sir Arthur du Cros, Bt., to develop the well-known Craigweil House Estate, Bognor Regis, and was responsible for a number of the large private residences built upon this estate. He later held the appointment of consultant for a number of housing estates in and around Greater London.

During recent years Mr. Auty closed his practice for a second time due to war conditions, and took up an appointment with the Air Ministry, after which, until his retirement in 1946, he was in the Architectural Department of the London County Council.

Mr. Auty was a keen Freemason.

Joseph Thorneycroft Shelton [*A*], a partner in the firm of Gornall, Kelly and Shelton, of Prescot, Lancashire, died on 21 July last, at the early age of 40.

He commenced private practice in 1946. His work has been in connection with housing schemes at Worthing, Frinton Park, and St. Helen's, Liverpool: he was architect to St. Helen's Hospital and the Prescot Urban District Council.

Peter George Jeffery Carter [*F*], of Watford, died on 15 August.

Mr. Carter was educated at Reading School, and in 1921 he entered the firm of Mr. G. B. Willcocks [*F*], of Reading, where he completed his articles and qualified as an Associate R.I.B.A. Thereafter, he was engaged as an assistant by Mr. James Allner [*F*], of Poole, Dorset, and later by Mr. Austen Hall [*F*], of London, where he undertook a considerable amount of bank design and construction in the City and provinces.

In 1927 he joined his uncle, the late Mr. Sydney Dawe [*F*], at Rickmansworth, shortly afterwards moving to the present offices, 83 High Street, Watford, where the partnership of Messrs. Dawe and Carter was established with his brother, the late Mr. Richard Jeffery Carter [*A*]. Some of the work carried out during this partnership included local schools; many licensed premises for The Cannon Brewery Company, one of the best known being The Three Horseshoes, Garston. As architects to the Watford and St. Albans Gas Company, they were responsible for the design of Radiant House and The Parade Showrooms, together with other industrial and commercial works in the district. Domestic works included 'Herga', Stratford Road, Watford, and 'Westwinds', Rickmansworth.

On the death of Mr. Sydney Dawe, followed by the death of Mr. Richard Jeffery Carter, Mr. Peter Carter continued the practice during the war years, being joined in 1946 by Mr. J. L. Caldwell [*A*] and Mr. R. Neil [*A*].

Mr. Carter was recently appointed by The Brewers' Company as Surveyor to Aldenham School and by The Haberdashers' Company as Surveyor to the Girls' and Boys' Schools at Monmouth, and was at the time of his death engaged on the design and construction of war memorials for both of these schools. He was for many years a Council and Committee member of the Essex, Cambridge and Hertfordshire Society of Architects, and was recently made a Freeman and Liveryman of the City of London and a member of the Carpenters' Company. He leaves a widow, a daughter and two sons.

Henry Cayley, J.P., M.A. [*A*]. The death is recorded of Henry Cayley, of Calgarth Corner, Windermere, Westmorland, on 22 August 1949. He was in his eightieth year.

Elected Associate, R.I.B.A., in 1901, after assistantship in the office of Barry Parker and Raymond Unwin, he was associated in the early work at Letchworth. Commencing practice in 1903, he specialized in church restoration work, but was also interested in town planning, and planned housing estates at Rothwell, and Desborough in Northamptonshire.

Henry Cayley was a keen mathematician and astronomer, and took great pleasure in delivering addresses and reading papers on those subjects. Since going to live in the Lake District in the inter-war years he has rambled many thousands of miles over its mountains. Less than a year ago, when 79, he led a day's ramble consisting of younger people.

Charles William Baker [*F*] had been ill for some time before he died on 25 August 1949, aged 78. He was trained at the Royal Academy Architectural School and commenced personal practice in London in 1902 in temporary partnership with Mr. T. J. Denny [*L*].

Mr. Baker's principal architectural works were private houses, but his practice was varied nevertheless: he built a factory at Tooting, carried out renovations to Hever Castle, Kent, executed the drawings for Brisbane Cathedral and the Church of St. Matthew, Auckland, and converted a fishing temple at Cliveden into a private chapel. He designed the wrought-iron memorial chancel screen at St. Peter's, London Docks, the font cover of Sittingbourne Church, the stone reredos, Gillingham Church, and the war memorial cross for the New Malden Congregational Church.

Robert Henry Fletcher [*L*], who lived in Hull, died on 1 June 1948, aged 67. He was with the Hull Corporation from 1903 until his retirement from local government service in 1946; he taught building construction at the Hull Municipal Technical College Evening Classes for 45 years.

William Henry Wilkinson, F.R.I.C.S. [*L*], practised throughout his career in Halifax. He was partner in the firm of Walsh, Wilkinson and Couts, of 10 Harrison Road, Halifax.

Articled to Joseph F. Walsh, F.R.I.C.S. [*F*], he was principally responsible for the extensions to the Royal Halifax Infirmary and housing estates at Dursley, Stamford and Haverhill. Mr. Wilkinson was a valuer to the Halifax Building Society and a member of the Council of the West Yorkshire Society of Architects. Born in 1888, Mr. Wilkinson died on 3 September last.

Thomas Brown [*A*], Head of the Building Department of the Herriot-Watt College, Edinburgh, to which he devoted his life's work, was aged 63 at the date of his death on 24 May 1949. He was trained at the Royal Technical College, Glasgow, and was the author of several literary works on practical geometry.

William John Roberts, O.B.E., M.A. [*A*]. The death occurred in Grahamstown, South Africa, of William John Roberts, who for twenty years was Director of Public Works in Southern Rhodesia, and who was responsible for designing many prominent public buildings in the Colony. He was 63. Born in England in 1886 and educated at Rossall and Manchester University, after graduating and being elected Associate R.I.B.A., he joined the Office of Works in London. In the first world war he served in the Royal Engineers in France. Rejoining the Office of Works in 1920, Mr. Roberts was transferred to the China station staff. Returning to London in 1927, he then went to Salisbury, S. Rhodesia, taking up the appointment of Director of Public Works, a position he held until his retirement in 1946.

During the second world war, Mr. Roberts was Director of Works for Defence, and was awarded the O.B.E. in the 1942 New Year Honours. After his retirement he lived for a time in Cyprus, and then went to Port Alfred, where he practised architecture. At the time of his death he was architect for the Beit Trust, was Diocesan architect and had carried out work for the Northern Rhodesian Government. Mr. Roberts designed the Vincent and Milton Buildings in Salisbury, the Salisbury Post Office, additions to Government House, and many other Government buildings throughout the Colony. He designed the proposed memorial cloisters at the Anglican Cathedral. These buildings have style and dignity, and a particular note which he introduced into his public buildings was a modified Spanish colonial style possessing a charm of its own. His Government buildings at Umtali form an excellent example and suit the border town well.

A Freemason, he is survived by his widow and a married daughter (Mrs. D. Leslie, of Cairo).

Members' Column

This column is reserved for notices of changes of address, partnership and partnerships vacant, or wanted, practices for sale or wanted, office accommodation, and personal notices other than of posts wanted as salaried assistants for which the Institute's Employment Register is maintained.

APPOINTMENTS

Mr. Harold S. Barnett [*L*] has resigned from the North Thames Gas Board upon being appointed Divisional Architect to the National Coal Board, East Midlands Division. His office is at 18 Milton Street, Nottingham, where he will be pleased to receive trade catalogues etc.

Mr. John Lacey, A.M.T.P.I. [*A*], having relinquished his lectureship at the Northern Polytechnic, London, has been appointed Senior Assistant in charge of the Evening School of Town Planning at the Regent Street Polytechnic. He is continuing in private practice at 37 Hampstead Lane, London, N.6 (MOUntview 2511).

PRACTICES AND PARTNERSHIPS

Mr. Harold Baily [*F*] and **Mr. T. A. Sutcliffe** [*A*] have amalgamated their practices, and will practise in future under the style of **Harold Baily, Sutcliffe and Associates** at the same address as before, 31a John Adam Street, Adelphi, London, W.C.2 (TEMple Bar 6813).

Mr. S. F. Burley [*L*] has retired from the practice of **Fisk, Burley and Fisk** [*A/L/L*], 24, Buckingham Street, Strand, London, W.C.2, as from 30 September 1949. The practice will be continued under the same style by **Mr. W. W. Fisk** [*A*] and **Mr. S. H. Fisk** [*L*].

The partnership subsisting between **Corrigall, Crickmay and Partners** and **Mr. W. W. Wood**, M.I.Struct.E. [*F*], was dissolved by mutual agreement with effect from 30 April 1949. **Mr. Wood** took over the Capetown practice at General Estate Chambers, 136 Adderley Street, Capetown, which he is continuing under his own name.

Mr. Herbert J. Davies [*F*], having relinquished his appointment as Senior Assistant Architect to British Railways, London Midland Region, has commenced private practice at 44 Marshals Drive, St. Albans, Herts, where he will be pleased to receive trade catalogues etc.

The Peter Dunham Group, who practise at 42-44 Hastings Street, Luton, Bedfordshire, have taken into partnership **Mr. M. C. Harrison** [*A*].

Mr. R. E. Enthoven [*F*], **Mr. G. I. C. Highet** [*F*] and **Mr. W. W. Atkinson,** O.B.E. [*A*], have transferred their offices to 4 Raymond Buildings, Gray's Inn, London, W.C.1 (CHAncery 7684). **Mr. R. E. Enthoven,** sole partner in the firm of **Pakington and Enthoven,** will thenceforward practise under his own name. **Mr. Kenneth R. Smith** [*A*] has entered into private practice at 10 Bayley Street, London, W.C.1. (MUSeum 4211.) **Mrs. S. M. Haywood** [*A*] has entered into private practice at 4 Raymond Buildings, Gray's Inn, London, W.C.1 (CHAncery 7684).

Mr. T. Alwyn Lloyd [*F*] has taken into partnership **Mr. Alexander J. Gordon** [*A*], who has previously been associated with him. They will practise as **T. Alwyn Lloyd and Gordon** [*F/A*].

Mr. S. V. W. McCready [*A*] has commenced practice at 2 Antrim Street, Lisburn, Co. Antrim, and will be pleased to receive trade catalogues, samples etc.

Mr. Howard C. Parsons [*A*] has commenced practice at Shrubbery Cottage, High Street, Yatton, Somerset (Yatton 3326) and will be pleased to receive trade catalogues etc.

The partnership hitherto subsisting between **Mr. Ivor Shaw** [*F*] and **Mr. Sidney John Lloyd** [*A*] under the style of **Shaw and Lloyd,** at 74 Great Russell Street, Bloomsbury Square, London, W.C.1, has been dissolved.

CHANGES OF ADDRESS

Booth and Ledeboer [*F/A*] have removed from 3 Southampton Place, London, W.C.1, to 14 Lincoln's Inn Fields, London, W.C.2 (HOLborn 3532).

Mr. Michael Bunney, M.A. [*F*], and **Mrs. Charlotte Bunney** [*A*] formerly practising at Ravenstonedale, Westmorland, are now practising from 30 Lowther Street, Kendal, Westmorland.

Mr. F. R. Wright [*L*] has removed from 306 Victoria Park Road, Leicester. He is now practising at 128 Regent Road, Leicester, and will be pleased to receive trade catalogues etc.

Mr. Harry Cherrington [*F*] and **Mr. S. J. Stainton** [*F*], who practise under the style of **Cherrington and Stainton,** have transferred their Birmingham offices from 133 Edmund Street, Birmingham 3 to 2 Augustus Road, Edgbaston, Birmingham 15 (EDGbaston 1854).

Mr. Herbert E. Jenner [*A*] has left Rome. His address for future correspondence, trade catalogues etc. is c/o Imperial War Graves Commission, 3 Rue de Toulouse, Brussels, Belgium.

Mr. Albert Neill [*A*] has removed from 142 Royal Avenue, Belfast, to 40 Victoria Street, Belfast, to which all future communications should be sent. (Mr. Neill is Hon. Sec. of the Royal Society of Ulster Architects.)

The new address of **Mr. J. O. Weller** [*L*] is 6 St. John's Avenue, Morecambe and Heysham, Lancashire (Morecambe 1400).

PRACTICES AND PARTNERSHIPS WANTED AND AVAILABLE

Fellow, A.M.T.P.I. wishes to purchase practice with or without office accommodation. Any district considered except London. Particulars in confidence to Box 75, c/o Secretary, R.I.B.A.

Junior partnership exists in old-established practice in West Country (coastal city) having scope for Associate with town planning or surveying qualifications. Box 74, c/o Secretary, R.I.B.A.

ACCOMMODATION

Country member urgently requires small office (1 room) furnished or unfurnished with share of telephone and typing service at £100 per annum, W.1 or S.W.1 district of London. Box 78, c/o Secretary, R.I.B.A.

FOR SALE AND WANTED

For sale. *Authentic Mouldings* (Elliott), 5s.; *Practical Designing in Reinforced Concrete* (Cantell), Part I, 7s. 6d.; *Principles of Structural Mechanics* (Percy Waldram), 7s. 6d.; *Architectural Style* (Trystan Edwards), 7s. 6d.; *Sanitation of Buildings* (Swinson), 10s.; *Ruskin's 'Seven Lamps of Architecture'* 1880 Edition: offers. Box 77, c/o Secretary R.I.B.A.

Wanted by Associate, 1 or 2 copies of *Colour in rendering and sketching*, by Arthur L. Guptil. Box 76, c/o Secretary, R.I.B.A.

1850

Since 1850 The Architects' Benevolent Society

has assisted members and their dependants in time of need. **THE PENSION AND FAMILY PROVISION SCHEME** for Architects enables *you* to make provision now for yourself in retirement and for dependants in the event of death.

Details on request and stating date of birth, will be sent without obligation on application to:—

The Secretary, A.B.S. Insurance Department, 66, Portland Place, London, W.1. (LANgham 5721)